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ScreenBeam™

Central Management System

Deployment Guide

Version 1.2.15

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Version Information

ScreenBeam Central Management System User Manual
Version 1.2.15
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Section 1

Overview and Setup

Congratulations on purchasing your ScreenBeam™ Central Management System (CMS). With this solution Actiontec Electronics, Inc. provides a full set of tools to simplify the configuration and management of your ScreenBeam receivers. We recommend reading through this section to familiarize yourself with the features and benefits the ScreenBeam™ Central Management System has to offer.

1.1 Introduction

Actiontec's ScreenBeam™ Central Management System (CMS) is a full-featured software utility to remotely configure and manage a group of ScreenBeam wireless display receivers. After the initial setup, the CMS utility will communicate over your network to each ScreenBeam receiver, allowing for full control of each unit. This CMS utility will ease the burden of having to configure each ScreenBeam receiver in your network individually.

DNS Discovery: Use your corporate DNS to automatically have each ScreenBeam Receiver connect to your ScreenBeam CMS server.

UPnP Discovery: Discover all your local network receivers automatically by enabling UPnP. CMS will automatically populate the Receiver list with all discovered ScreenBeam receivers in your network.

USB Configuration Tool: Easily generate the necessary configuration files to define receiver IP parameters and the CMS server to connect to, then write to a flash drive. Plug the drive into the ScreenBeam receiver and it will automatically configure itself to the values you set.

CMS Handoff: Seamlessly switch which CMS PC a receiver, or set of receivers, will connect to.

Remote Settings: Make parameters changes for one-to-many receivers from the CMS server remotely. All the settings that are available for each receiver locally are also available through the CMS server.

Firmware Update: Update firmware for receivers in batch using the ScreenBeam CMS server.

Grouping: Organize receivers into group sets allowing you to easily select a particular set of receivers for configuration and management.

Logging: Save receiver logs locally on the CMS server or to a remote FTP server. Logs can be updated on a schedule that you define.

Reboot/Restore: Remotely reboot receivers or set them back to factory default.

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1.2 Minimum System Requirements

For PC running the ScreenBeam CMS software:

- Microsoft Windows 7, 8, or 8.1
- Core i3 or equivalent processor
- 4 gigabyte RAM
- 200 MB of free HDD space
- Stable 100/1000 network connection

Open the following ports to the PC running ScreenBeam CMS:

- TCP 7237: To communicate with the receivers
- TCP 7238: For uploading receiver logs to the CMS server

  Note: Both ports are customizable. These are the default values.

Companion servers:

- Web Server (for receiver firmware downloads, screensaver update, and background update)
- Internal corporate DNS Server (optional, but strongly recommended)
- FTP Server (optional)

ScreenBeam Receivers:

- ScreenBeam Pro – Business Edition
  - Firmware: 2.10.7.0 (or higher)
- ScreenBeam Pro –Education Edition 2
  - Firmware: 2.9.17.0 (or higher)
- Actiontec USB-to-Ethernet adapter (SBETH100) or USB-to-Wireless adapter (SBT100U), for each ScreenBeam receiver

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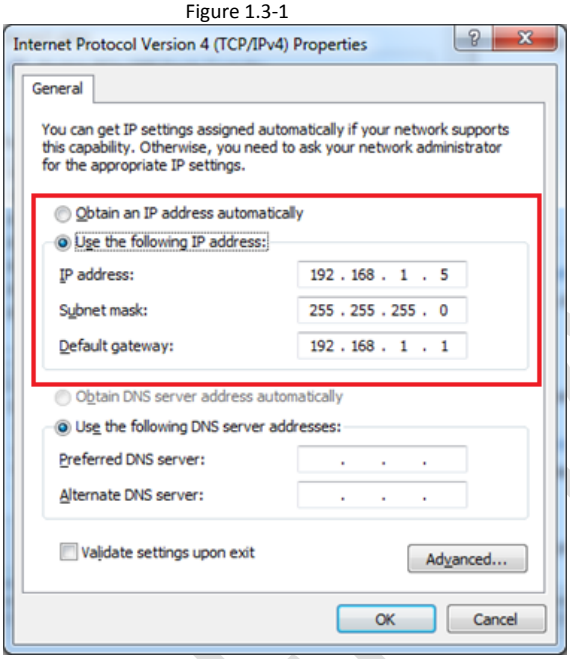
1.3 Preparing the System

Follow the instructions below to prepare your selected PC for use with the ScreenBeam CMS software.

1. Assign a **fixed** IP address for the PC.

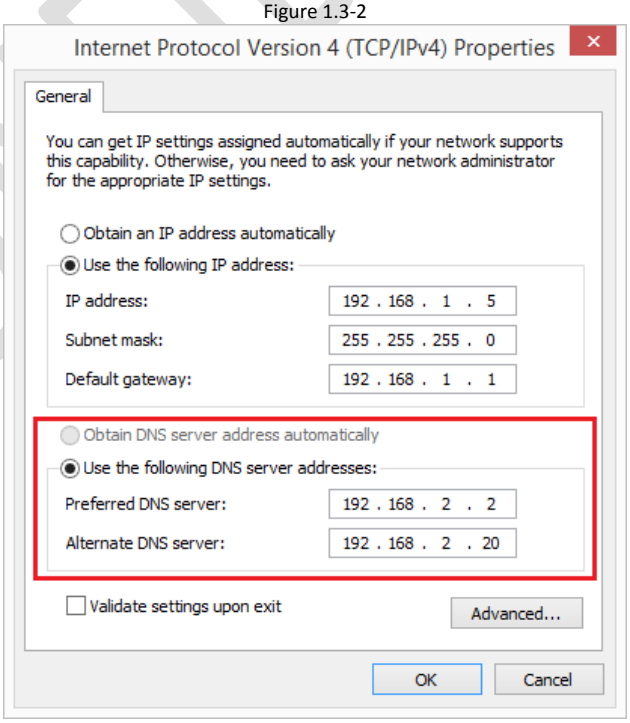
Figure 1.3-1



Note: A fixed IP address is required. Using a dynamic IP address may cause lost connectivity between the CMS server and the receivers.

2. If applicable, enter the corporate DNS address for your network.

Figure 1.3-2

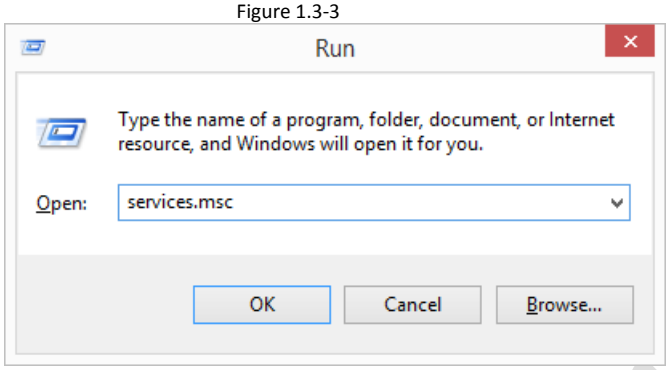


Note: A corporate DNS server is required if you will be discovering receivers using the DNS method. Refer to Section 3.2 – DNS Discovery for details.

3. Make sure SSDP Discovery service is running. Start the Services Manager by typing **services.msc** from the

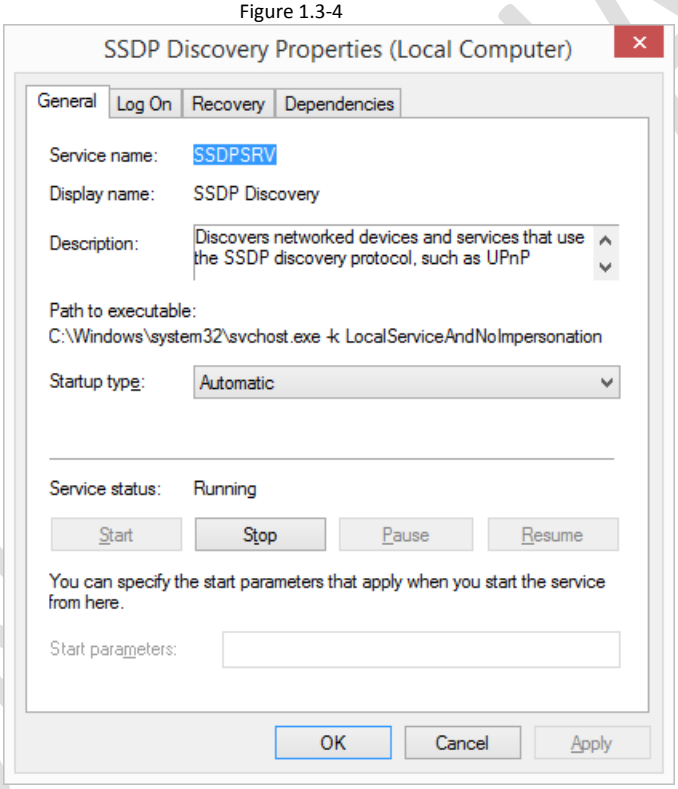
Run or Search bar.

Figure 1.3-3



4. Scroll down to SSDP Discovery and double click it. Set the Startup type to Automatic and start it if the service is not running.

Figure 1.3-4



Note: Enabling this service is only required if using the UPnP method for receiver discovery. Refer to Section 3.3 – UPnP Discovery for details.

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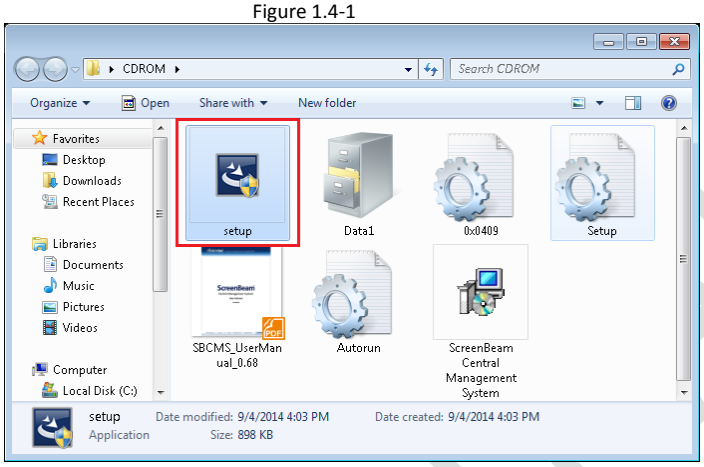
1.4 Installing the Software

Follow the instructions below to install the ScreenBeam Central Management System application to your PC.

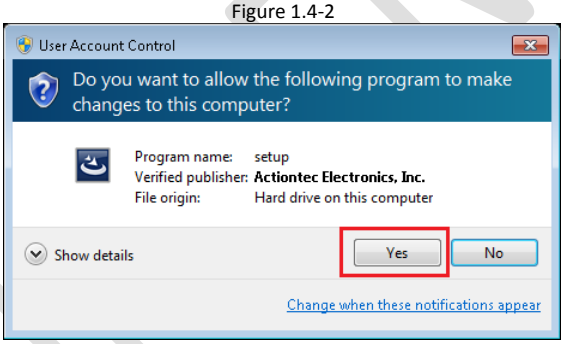
1. Insert the installation media into your PC. Double-click the **setup.exe** file to launch the setup program if it doesn't automatically run.

Figure 1.4-1



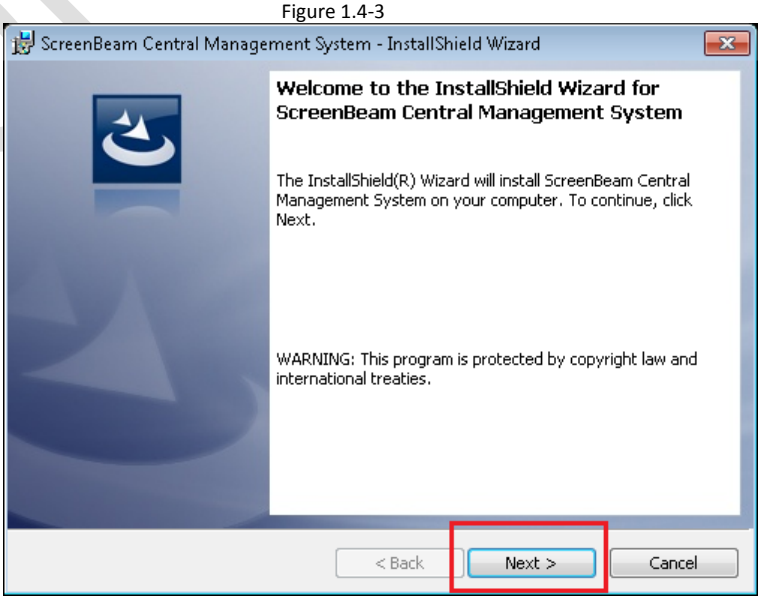
2. You may see the following User Account Control message. Select **Yes** to continue.

Figure 1.4-2



3. The setup wizard Welcome screen appears. Select **Next** to continue.

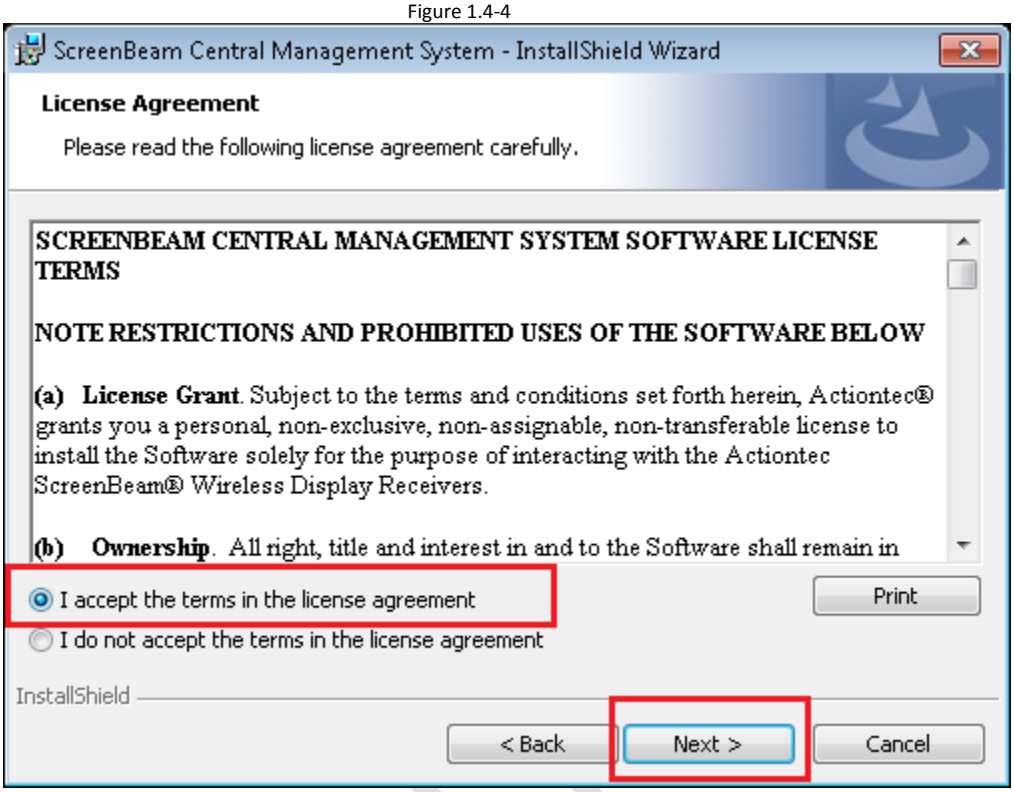
Figure 1.4-3



4. Click the **I accept the terms in the license agreement** checkbox to accept the terms and click **Next** to

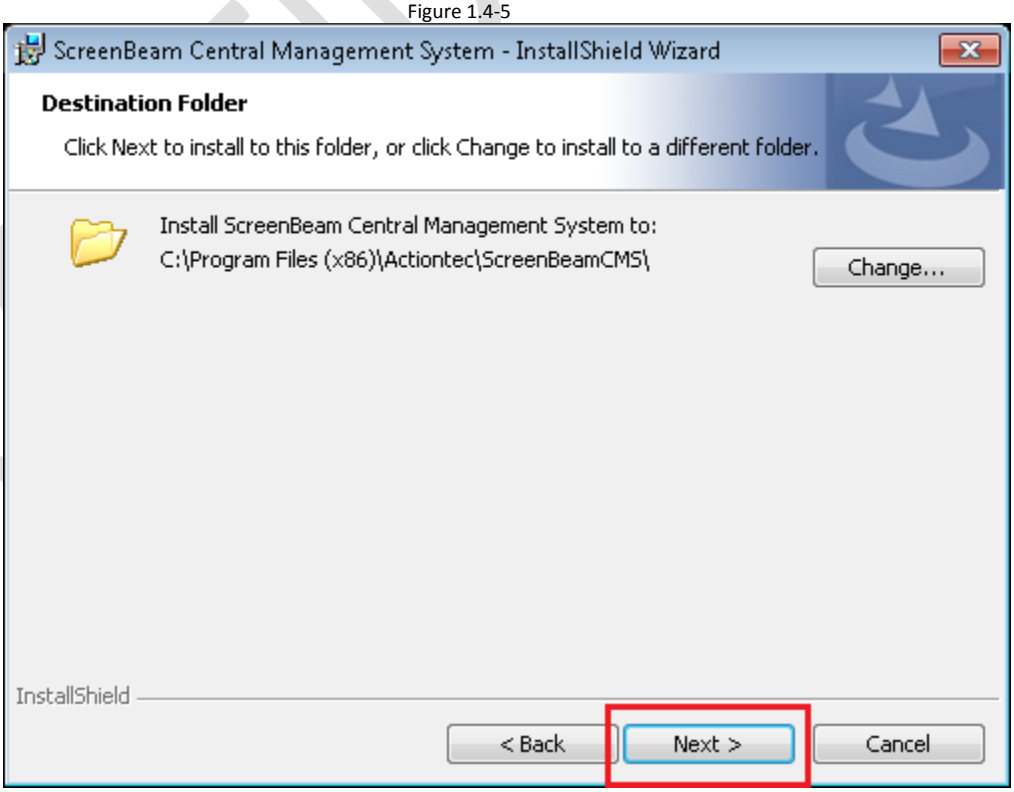
continue.

Figure 1.4-4



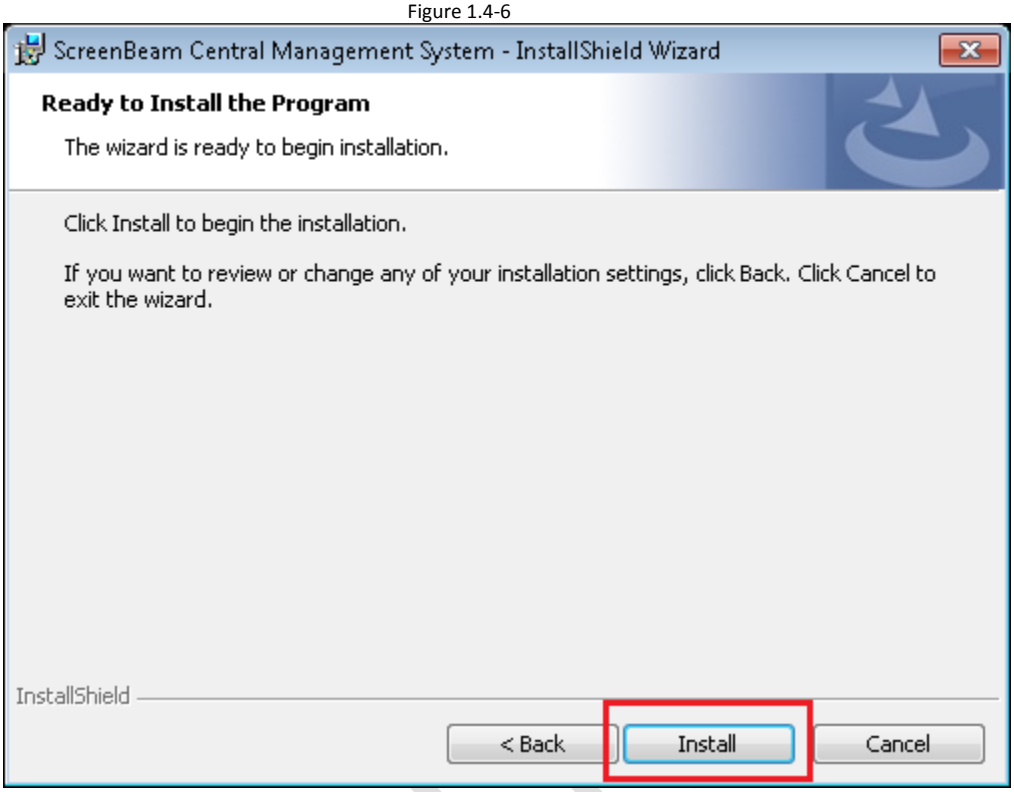
5. Enter a location to install the program, or accept the default location. Click **Next** to continue.

Figure 1.4-5



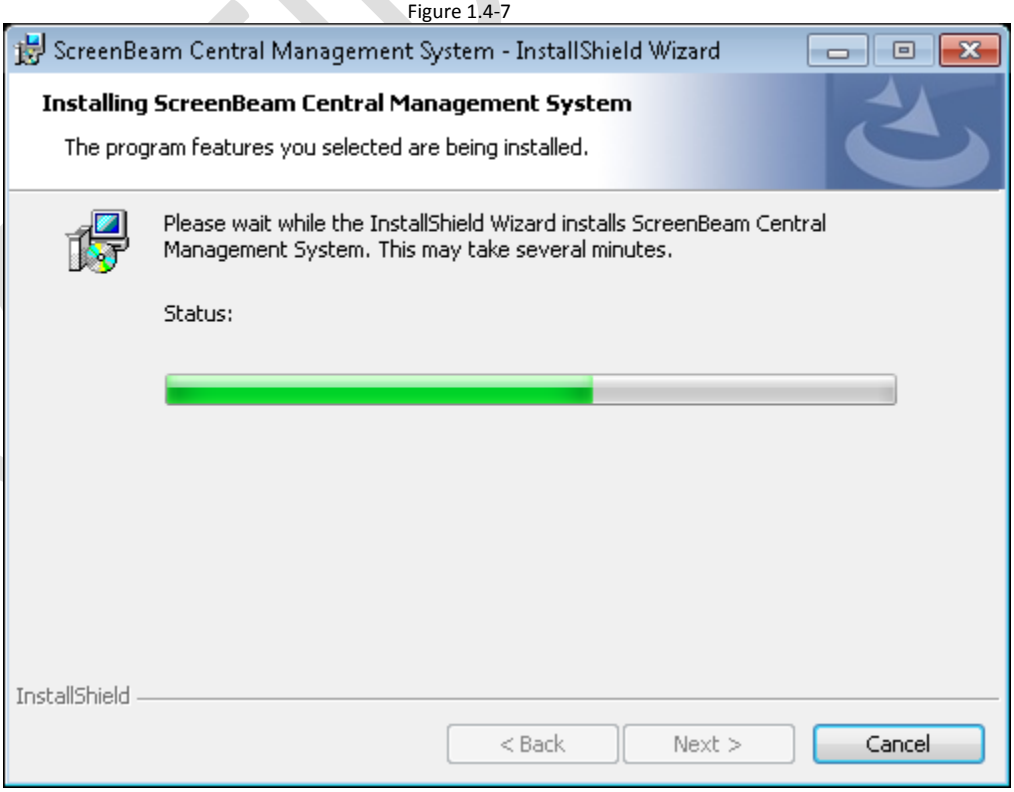
6. ScreenBeam CMS is ready to install. Click on **Install** to continue.

Figure 1.4-6



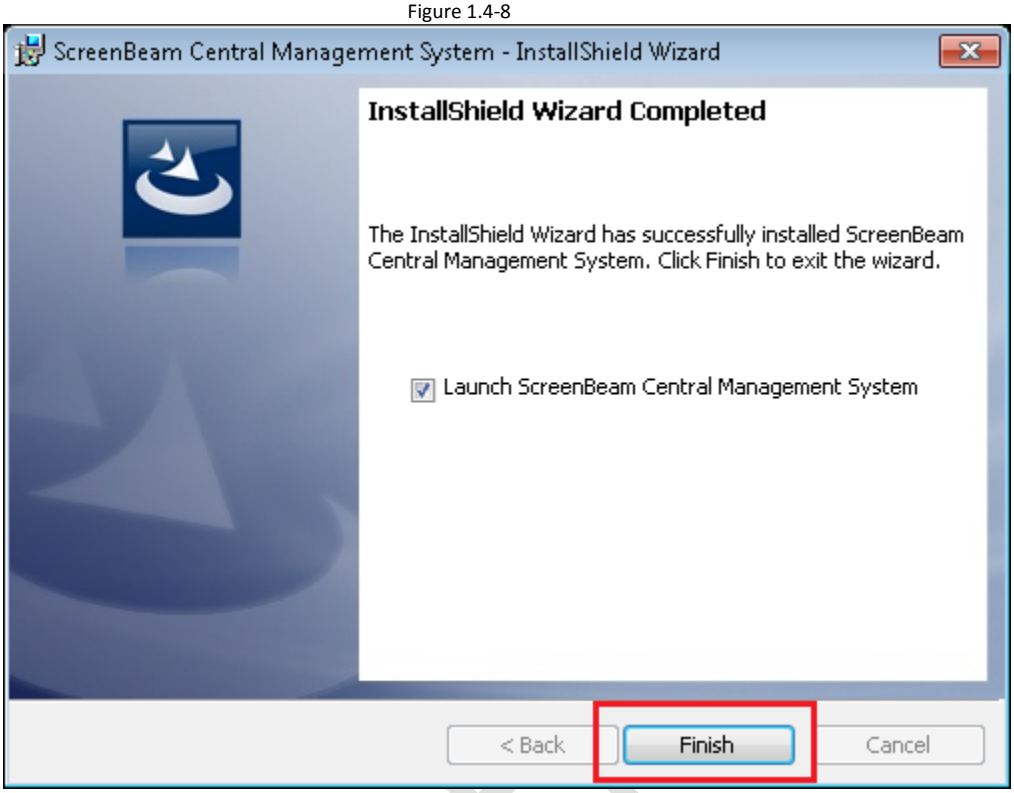
7. The setup wizard will copy the program file to the appropriate locations.

Figure 1.4-7



8. Select the **Launch ScreenBeam Central Management System** checkbox to launch the program after completing the setup. Click **Finish** to close the setup wizard.

Figure 1.4-8

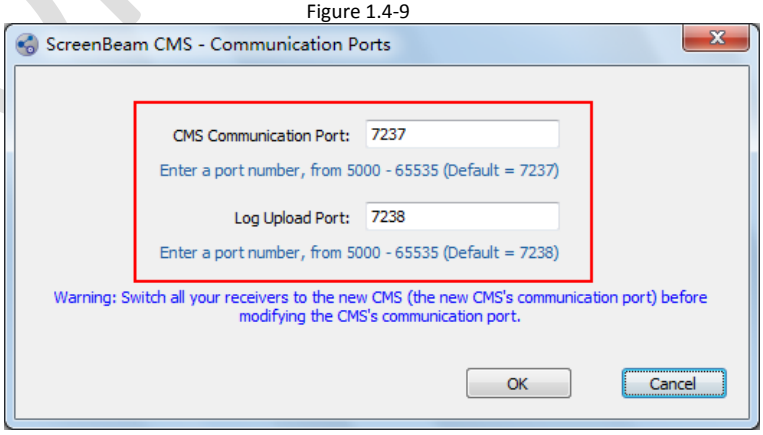


Note: A ScreenBeam Central Management System shortcut will also appear on the Desktop and in your Start Menu.

9. The **ScreenBeam CMS – Communication Ports** box appears. Set the **CMS Communication Port** and **Log Upload Port** to use for your CMS. These ports must NOT be used. Click **OK** to save the settings and launch the **ScreenBeam Central Management System** program.

- **CMS Communication Port:** Receivers communicate with the CMS through this port.
- **Log Upload Port:** Receivers upload logs to the CMS through this port.

Figure 1.4-9

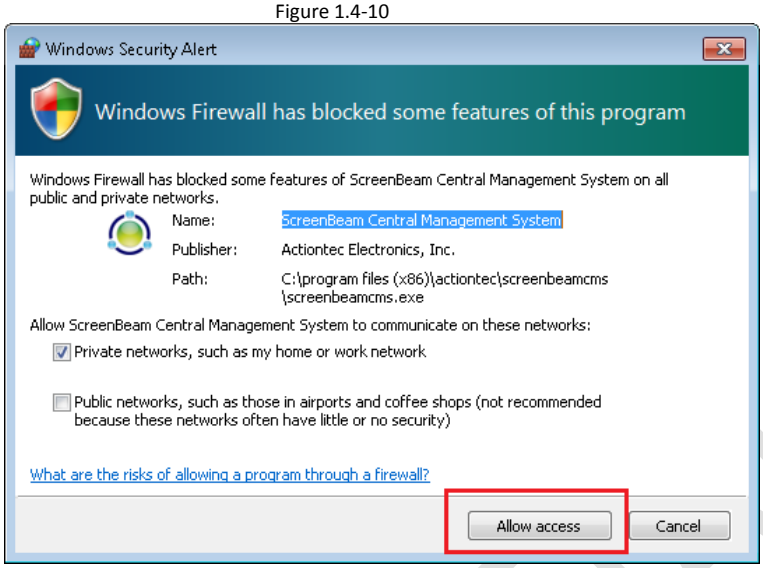


Note: You can change these values at any time. Refer to Section 8.2 – Modify CMS Server Settings for more information.

10. The following Windows Firewall screen may appear. Select to allow ScreenBeam Central Management

System through the firewall. Click **Allow access** to continue.

Figure 1.4-10



1.5 Getting to Know the User Interface

You should familiarize yourselves with the server interface before using the server to manage your receivers. The figure below shows the main interface of the Management Server.

Figure 1.5-1

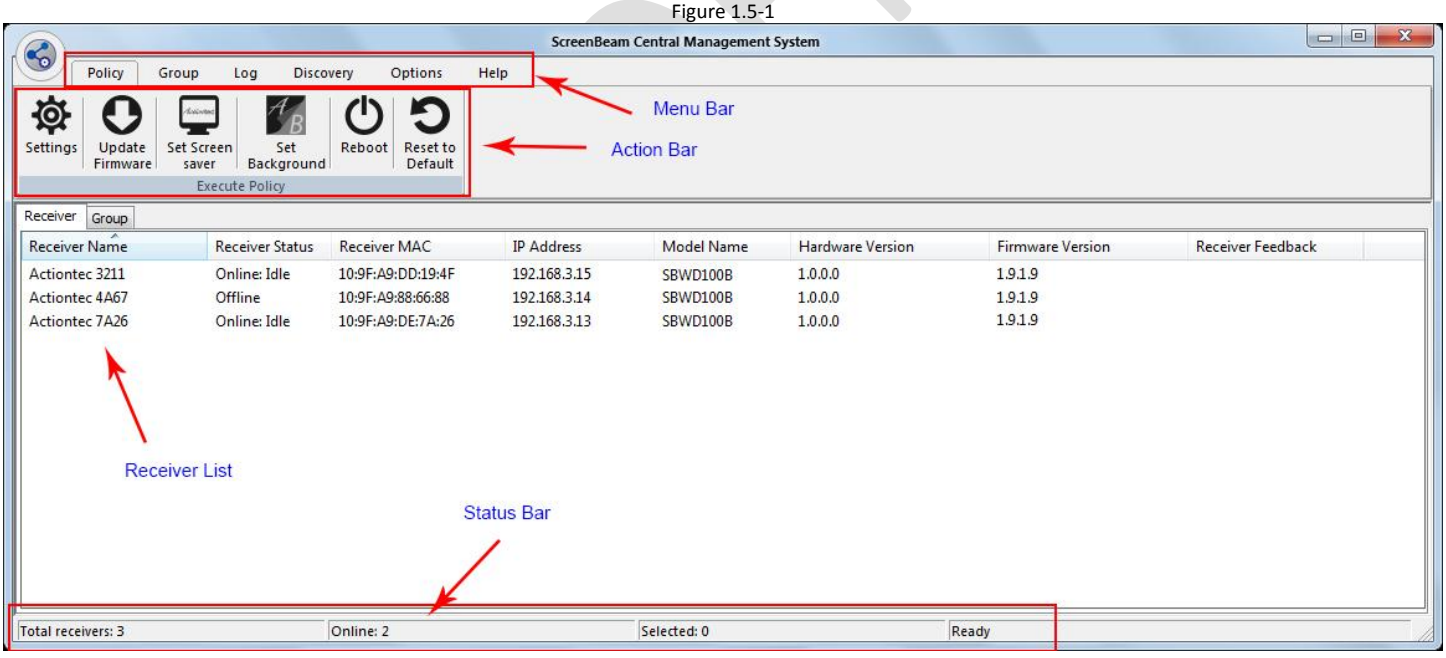


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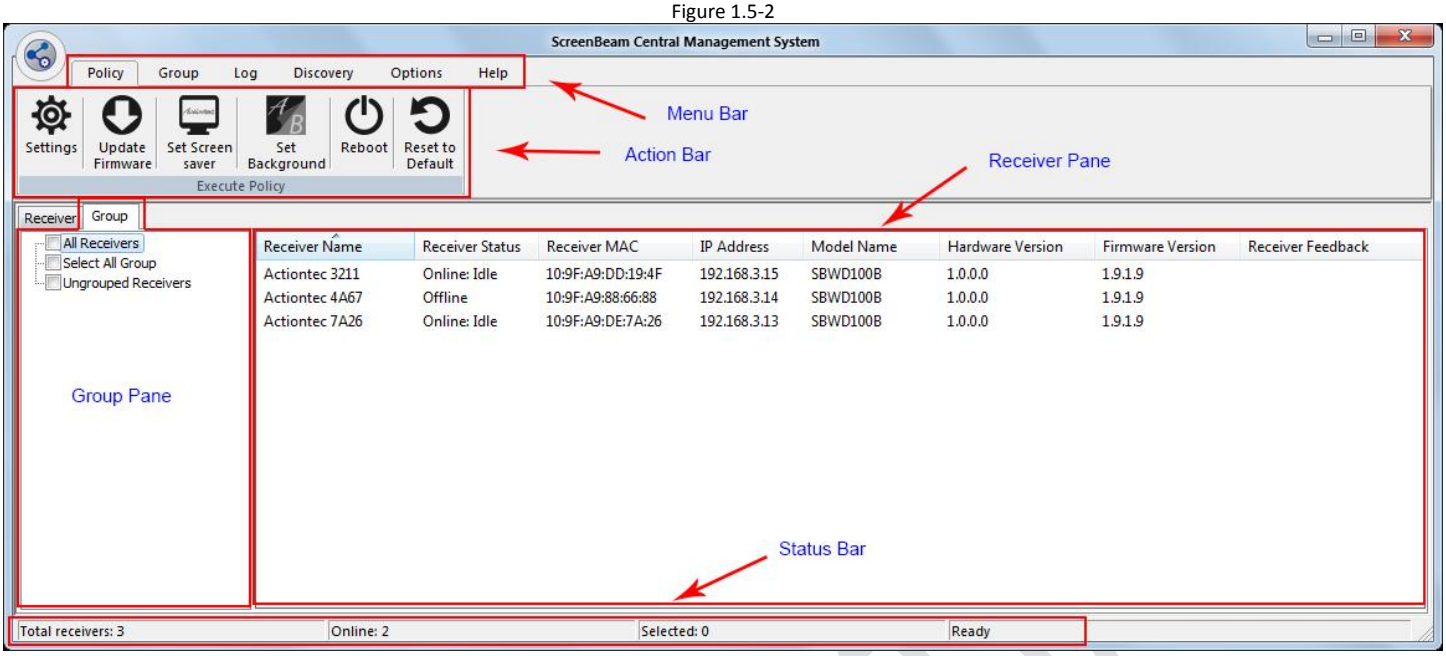
Figure 1.5-2



1.5.1 Menu Bar

The Menu Bar is a list of tabs which open up a list of functions in the Action Bar for the selected option.

- Policy: configuring receiver settings, maintenance, and logging
- Group: managing all your receivers into custom groups
- Log: enabling log uploads to the local server or a remote FTP server
- Discovery: adding your receivers and configuring settings for your CMS server
- Options: managing logs and customizing the Close button behavior; searching for receivers
- Help: getting help and information about the CMS software and software upgrade

1.5.2 Action Bar

The Action Bar displays the functions you can perform for the selected receivers. The Action Bar can be hidden or shown by double-clicking the tab header.

1.5.3 Receiver List

The Receiver List displays all the receivers configured in the system.

1.5.4 Group Pane

The Group Pane displays all the custom groups that you have created. And you can select receivers by group.

To select a group, you must check the checkbox to the left of that group name.

1.5.5 Receiver Pane

The Receiver Pane displays the ScreenBeam receivers of the selected group/groups.

1.5.6 Status Bar

The Status Bar displays the status of ScreenBeam receivers, such as the total number of receivers, and the number of online receivers.

1.5.7 Selecting Receivers

The selection conventions comply with those in Windows.

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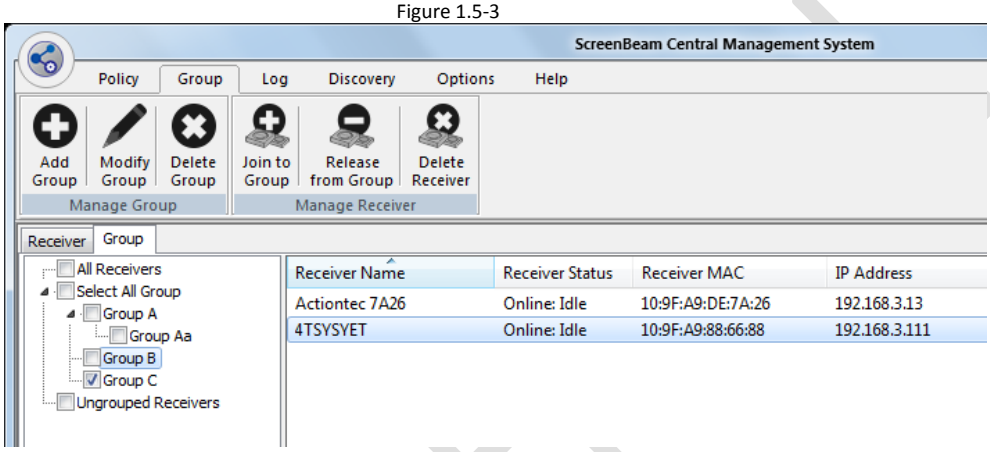
- **Selecting a receiver**: To select a receiver, click a receiver entry on the receiver list. The selected receiver is highlighted.
- **Selecting multiple receivers**: To select multiple receivers: hold down the "**Ctrl**" key and click the desired receivers. The selected receivers are highlighted. You can also deselect a receiver (or receivers) by holding down the "**Ctrl**" key and then clicking the receiver (or receivers).
- **Selecting receivers in the Group Pane**: To select all receivers in a group, check the checkbox of that group. All selected receivers are highlighted. To deselect the receivers in a group, clear the check mark. The two selection methods discussed above also apply here.

  You must note that clicking the group name (the box not checked) will display all receivers of this group in the receiver list, but they are not selected. In the example below, receiver "Actiontec 7A26" is not selected.

Figure 1.5-3



1.6 Customizing the Column Header of the Receiver Pane

The column header of the Receiver Pane is customizable. You can choose to hide or show a specific column. Currently, these columns are available: **Receiver Name**, **Receiver Status**, **Receiver MAC**, **IP Address**, **Model Name**, **Hardware Version**, **Firmware Version**, **Receiver Feedback**, **Wifi Channel**, **Receiver Location**, and **Note**.

- **Receiver Name**: This column displays the receiver's Receiver Name.
- **Receiver Status**: This column displays the receiver's status, such as **Online**, **Offline**, and **Busy**.
- **Receiver MAC**: This column displays the receiver's MAC address.
- **IP Address:** This column displays the receiver's IP address.
- **Model Name**: This column displays the receiver's model name.
- **Hardware Version**: This column displays the receiver's hardware version number.
- **Firmware Version**: This column displays the receiver's firmware version number.
- **Receiver Feedback**: This column displays feedback information from the receiver, such as firmware update status, receiver setup status.
- **Wifi Channel**: This column displays the receiver's Wi-Fi channel.
- **Receiver Location**: This column displays the receiver's location information.
- **Note:** This column displays user-defined information for the receiver.

Note: By default, these columns are hidden: **Wifi Channel**, **Receiver Location**, and **Note**.

1.6.1 Hiding a Column

Follow the procedure below to hide a column,

1. Move your mouse pointer to the desire column. The column will be highlighted.

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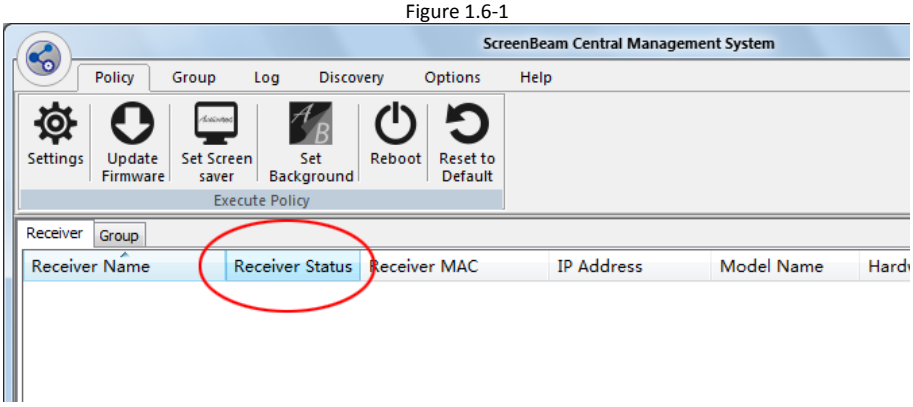
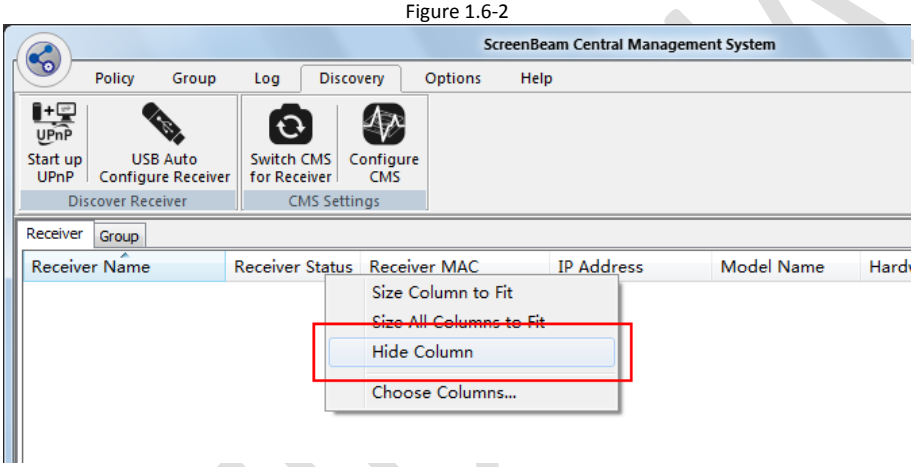
Figure 1.6-1



2. Right-click the column. A shortcut menu is displayed.
3. Select “Hide Column” from the shortcut menu.

Figure 1.6-2



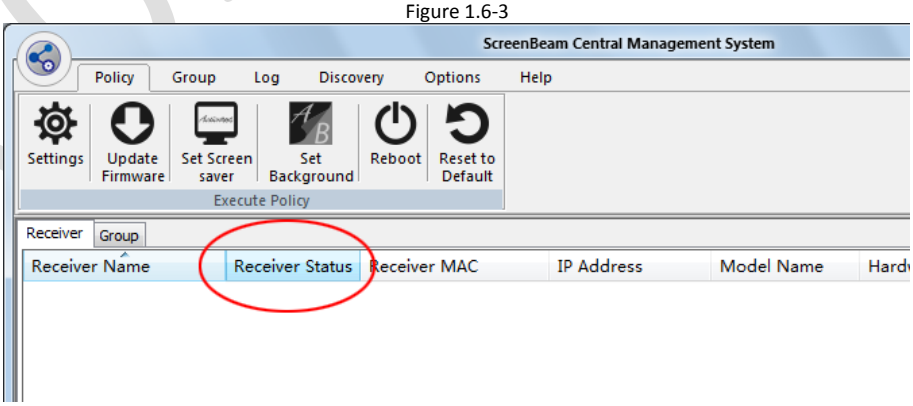
4. The selected column is hidden.

1.6.2 Hiding or Showing Columns

Follow the procedure below to hide or show more than one columns,

1. Move your mouse pointer to any column on the column header bar. The pointed column will be highlighted.

Figure 1.6-3



2. Right-click the column. A shortcut menu is displayed.
3. Select “Choose Columns” from the shortcut menu.

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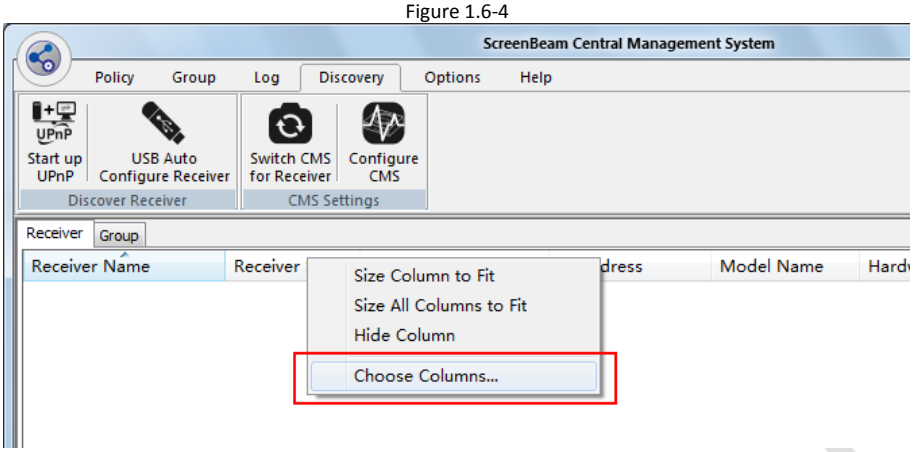
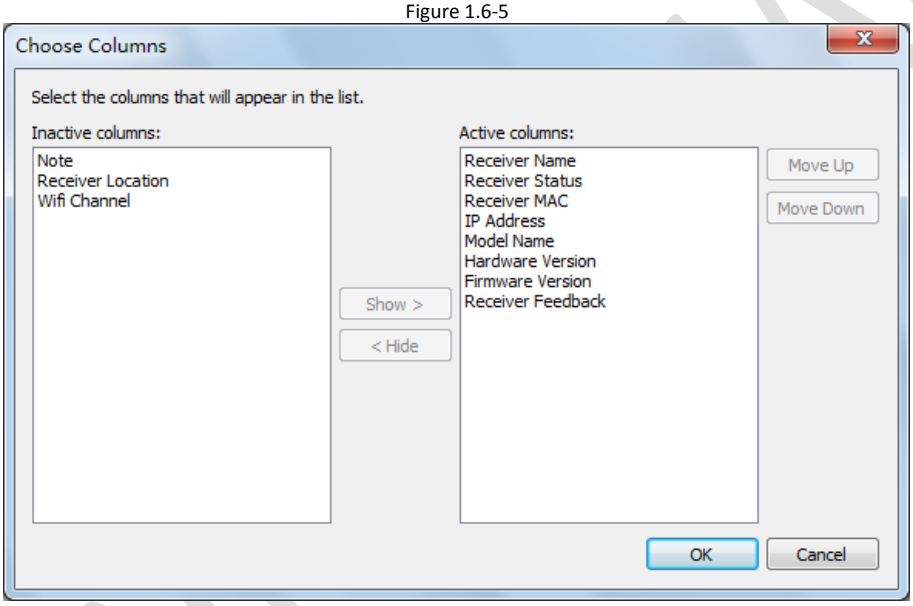
Figure 1.6-4



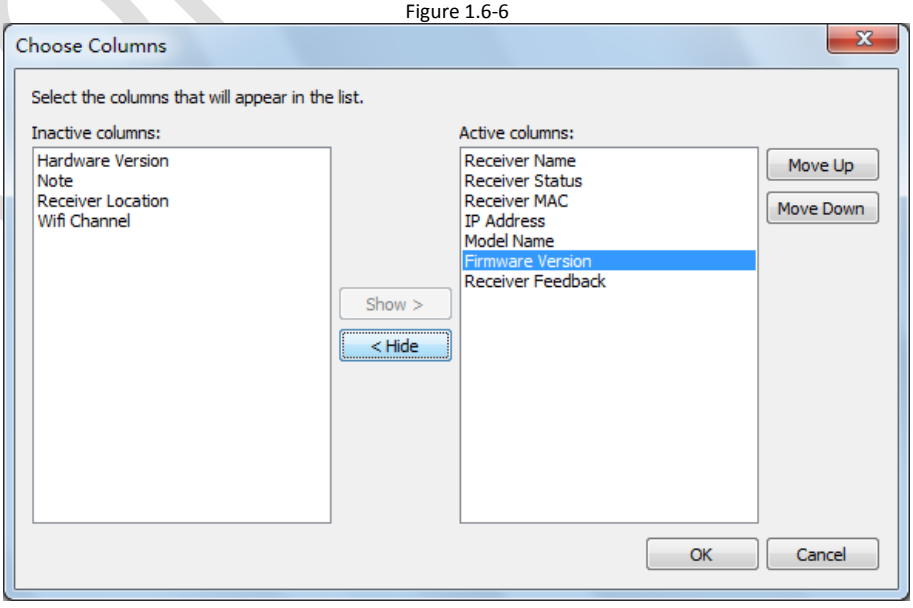
4. The "**Choose Columns**" window appears.

Figure 1.6-5



5. Select one or more columns in the **Active Column** pane, and click the **Hide** button to move these columns to the **Inactive Column** pane. Click **OK** to hide the selected columns.

Figure 1.6-6



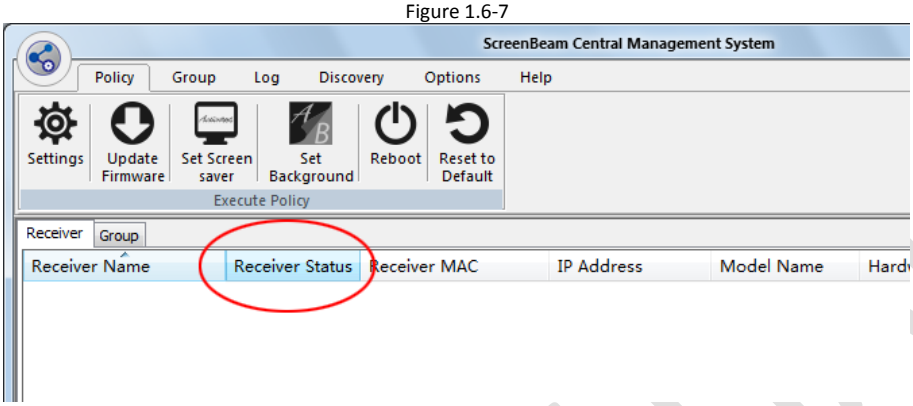
6. Do the opposite to show the desired columns.

1.6.3 Arrange Sequence for Active Columns

Follow the procedure below to hide or show more than one columns,

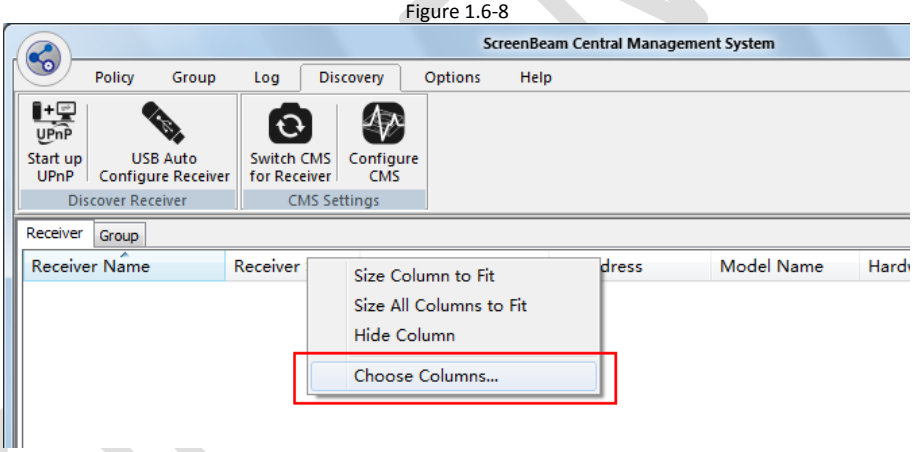
1. Move your mouse pointer to any column on the column header bar. The pointed column will be highlighted.

Figure 1.6-7



2. Right-click the column. A shortcut menu is displayed.
3. Select “Choose Columns” from the shortcut menu.

Figure 1.6-8



4. The “**Choose Columns**” window appears.

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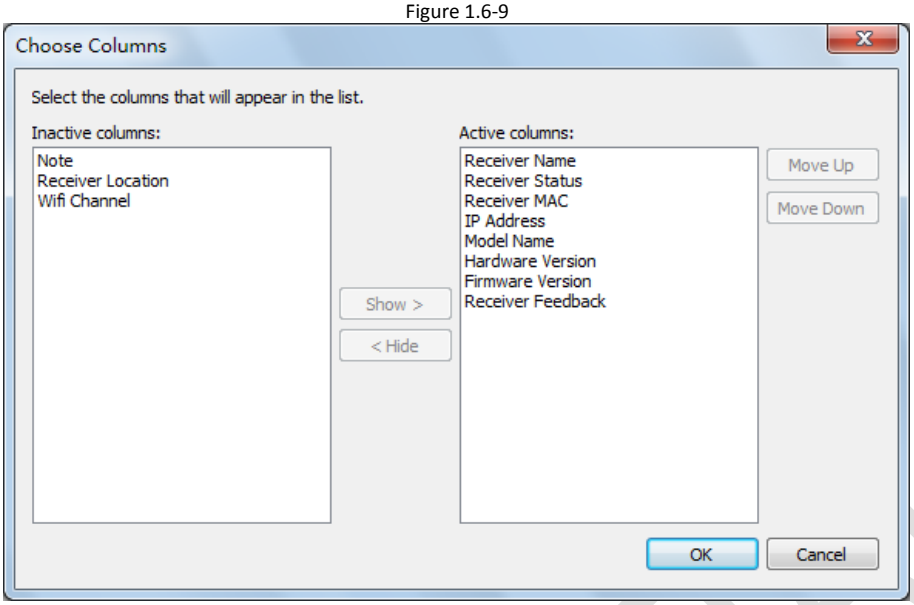
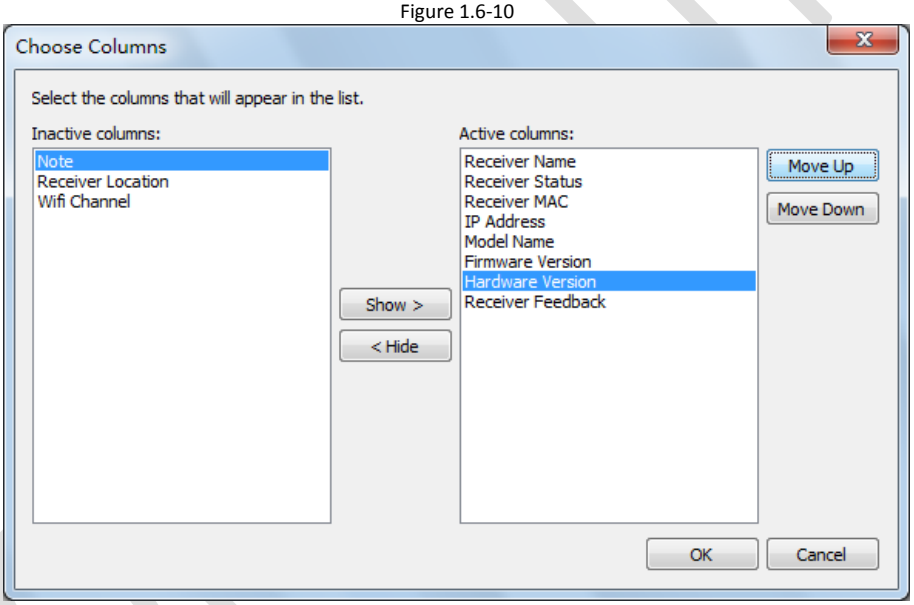
Figure 1.6-9



5. Select the desired column and click the "**Move Up**" or "**Move Down**" button to arrange the sequence.

Figure 1.6-10



6. Repeat the step above the arrange sequence for other columns. Click **OK** to confirm.

1.6.4 Adjusting Size for a Column

Follow the procedure below to adjust size for a column,

1. Move your mouse pointer to the desire column. The column will be highlighted.

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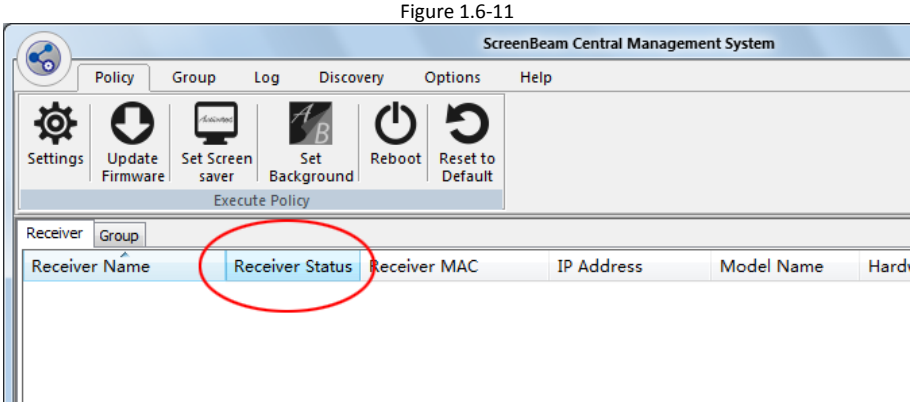
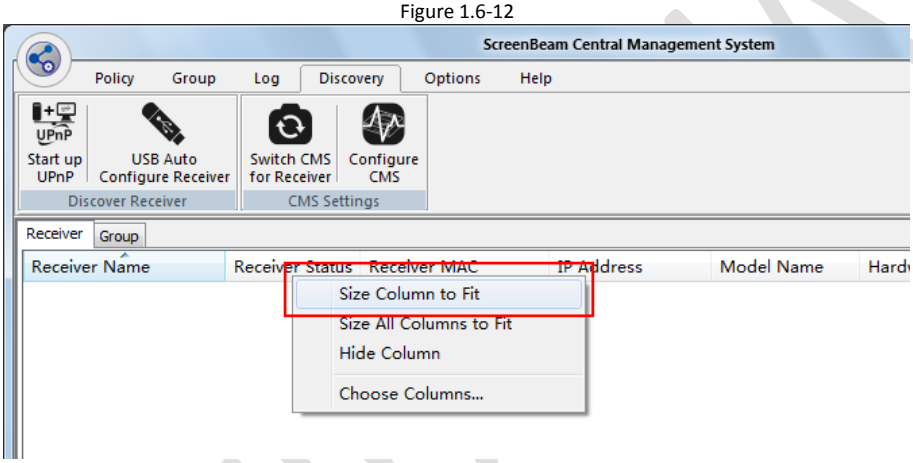
Figure 1.6-11



2. Right-click the column. A shortcut menu is displayed.
3. Select “Size Column to Fit” from the shortcut menu.

Figure 1.6-12



4. The selected column will be adjusted to fit the size of its content.

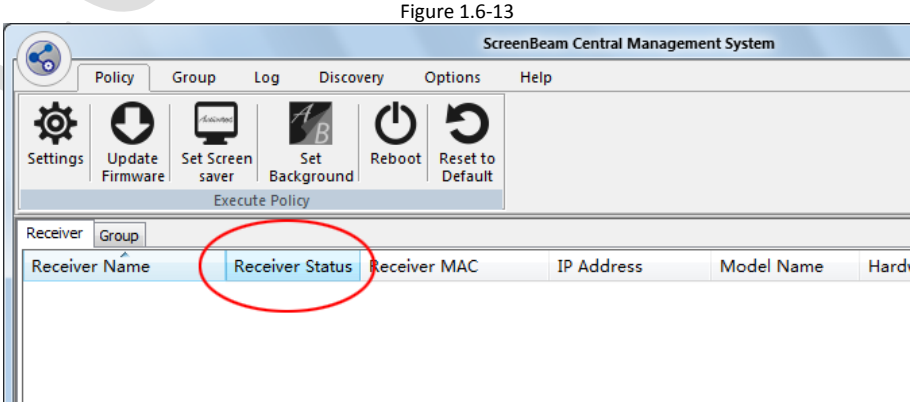
Note: You can also adjust the size of a column by dragging the right separator of that column.

1.6.5 Adjusting Size for all Columns

Follow the procedure below to adjust size for all columns,

1. Move your mouse pointer to any column on the column header bar. The pointed column will be highlighted.

Figure 1.6-13



2. Right-click the column. A shortcut menu is displayed.

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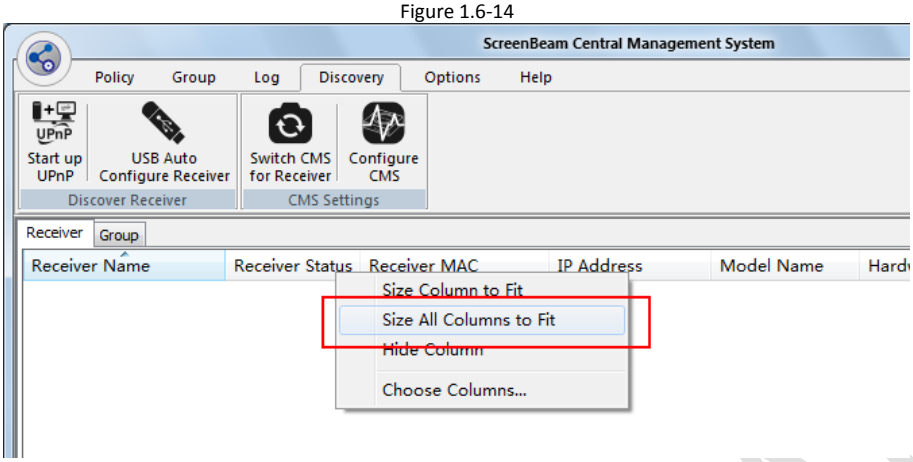
3. Select “Size All Columns to Fit” from the shortcut menu.

Figure 1.6-14



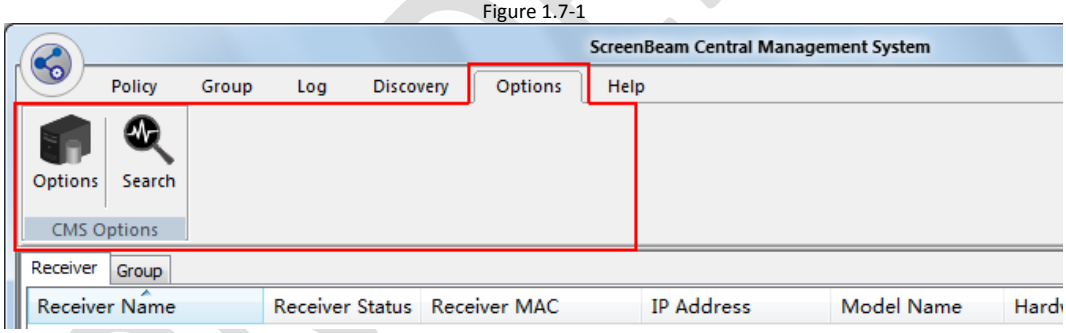
4. The active columns will be adjusted to fit the size of their content.

1.7 Setting up the Close Button Behavior

You can customize the behavior of the Close button here. By clicking the Close button, the CMS’s main window will minimize to the notification area or the CMS is closed, depending on your choice.

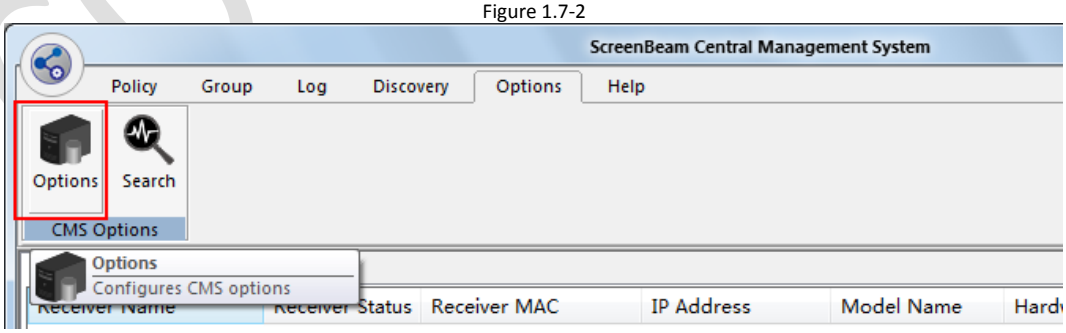
1. Launch the CMS software and go to the **Options** tab.

Figure 1.7-1



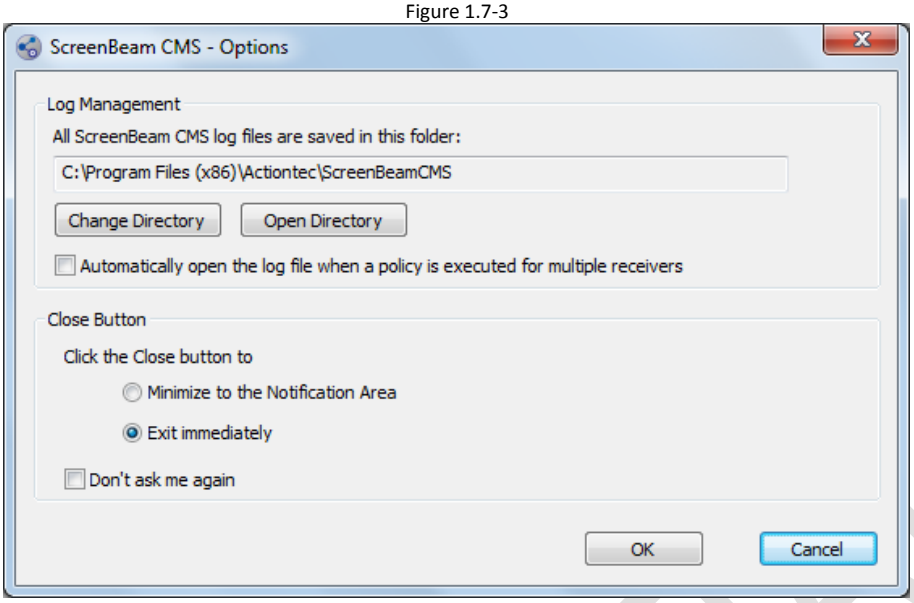
2. Select the **Options** button from the Action Bar.

Figure 1.7-2



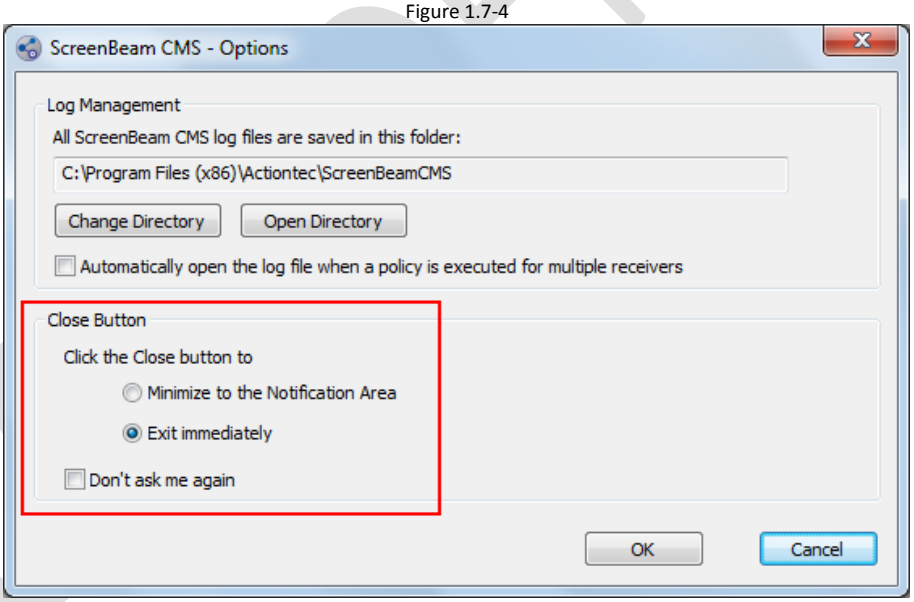
3. The **ScreenBeam CMS – Options** window appears.

Figure 1.7-3



4. Go to the **Close Button** section, and select a desired option.
   - **Minimize to the Notification Area**: Minimize the CMS window to the Notification Area.
   - **Exit immediately**: Close the CMS application immediately.
   - **Don't ask me again**: The CMS software will remember your choice and not show this window any more if this option is selected (checked).

Figure 1.7-4



5. Click **OK** to save your settings.

1.8 Checking the CMS Version

Go to the **Help** tab, and click the **About** button to display information about your ScreenBeam CMS software.

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Figure 1.8-1

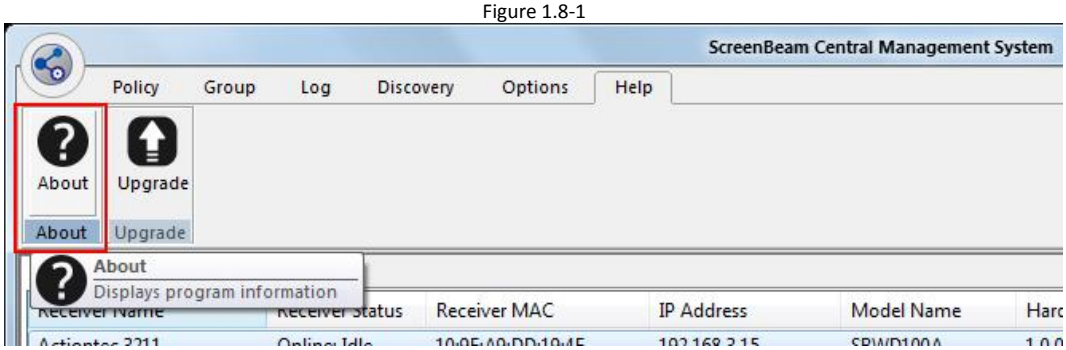
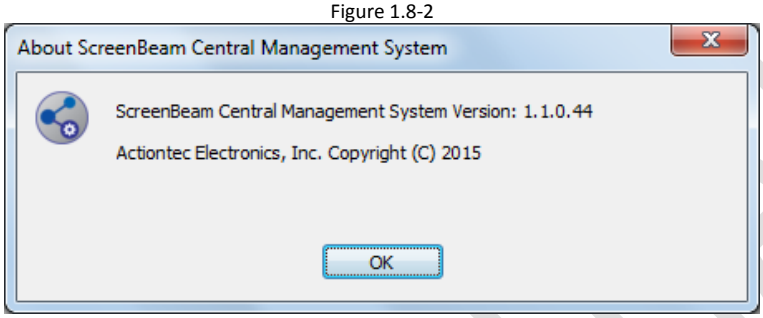


Figure 1.8-2

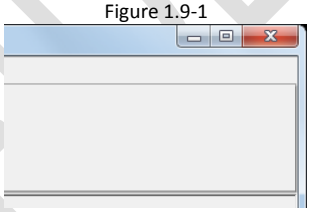


1.9 Exiting the CMS Software

Follow the procedure to close the CMS software:

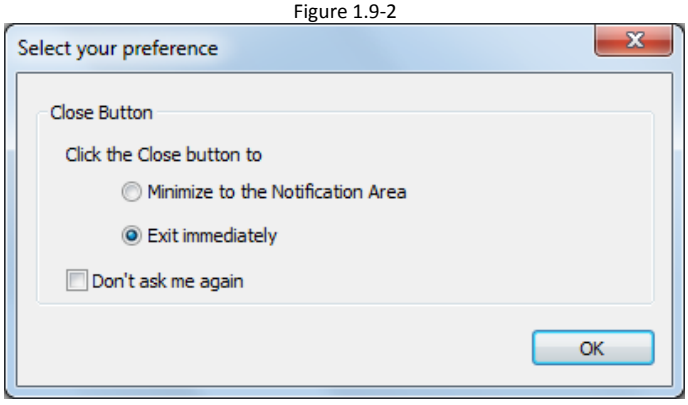
1. Click the Close button in the upper right corner of the CMS window.

Figure 1.9-1



2. The **Select your preference** window appears.
   - **Minimize to the Notification Area:** Minimize the CMS window to the Notification Area.
   - **Exit immediately:** Close the CMS application immediately.
   - **Don't ask me again:** The software will remember your choice and not show this window any more if this option is selected (checked).

Figure 1.9-2



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1.10 Note: You can change these settings in the Options menu. Refer to Section 1.6 Customizing the Column Header of the Receiver Pane

The column header of the Receiver Pane is customizable. You can choose to hide or show a specific column. Currently, these columns are available: **Receiver Name**, **Receiver Status**, **Receiver MAC**, **IP Address**, **Model Name**, **Hardware Version**, **Firmware Version**, **Receiver Feedback**, **Wifi Channel**, **Receiver Location**, and **Note**.

- **Receiver Name**: This column displays the receiver's Receiver Name.
- **Receiver Status**: This column displays the receiver's status, such as **Online**, **Offline**, and **Busy**.
- **Receiver MAC**: This column displays the receiver's MAC address.
- **IP Address:** This column displays the receiver's IP address.
- **Model Name**: This column displays the receiver's model name.
- **Hardware Version**: This column displays the receiver's hardware version number.
- **Firmware Version**: This column displays the receiver's firmware version number.
- **Receiver Feedback**: This column displays feedback information from the receiver, such as firmware update status, receiver setup status.
- **Wifi Channel**: This column displays the receiver's Wi-Fi channel.
- **Receiver Location**: This column displays the receiver's location information.
- **Note:** This column displays user-defined information for the receiver.

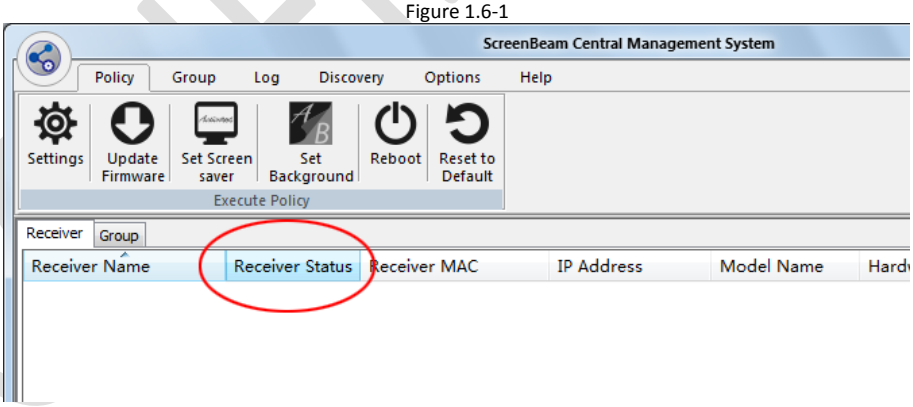
Note: By default, these columns are hidden: **Wifi Channel**, **Receiver Location**, and **Note**.

1.10.1 Hiding a Column

Follow the procedure below to hide a column,

5. Move your mouse pointer to the desire column. The column will be highlighted.

Figure 1.6-1



6. Right-click the column. A shortcut menu is displayed.
7. Select "Hide Column" from the shortcut menu.

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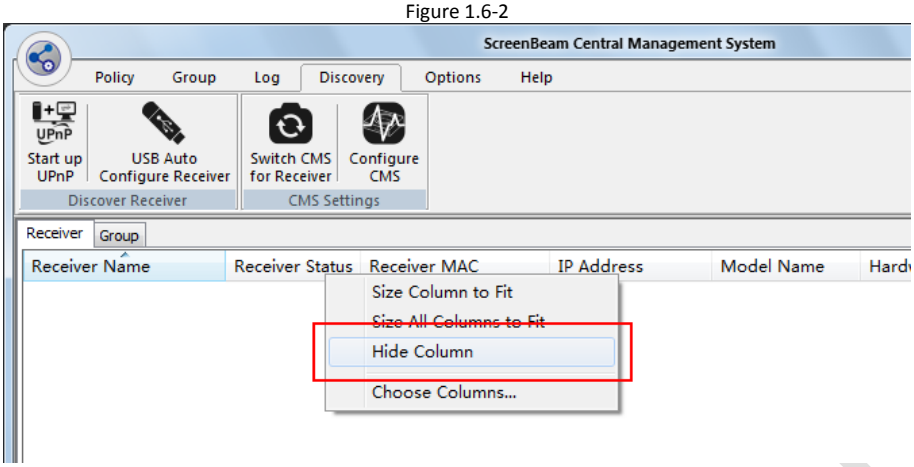
Figure 1.6-2



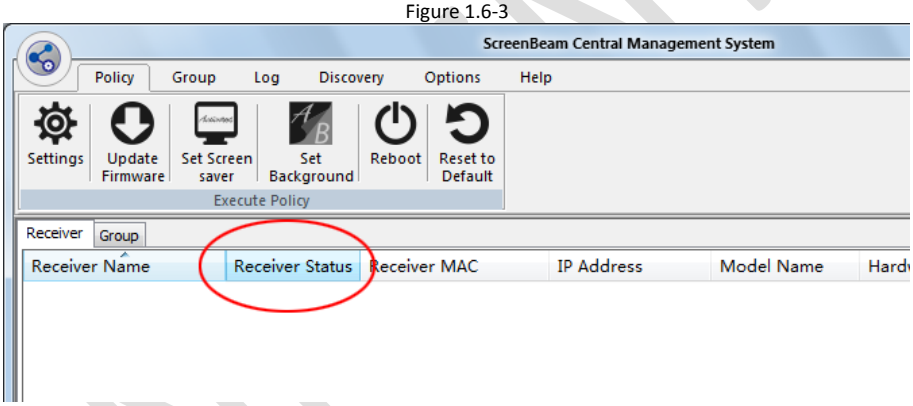
8. The selected column is hidden.

1.10.2 Hiding or Showing Columns

Follow the procedure below to hide or show more than one columns,

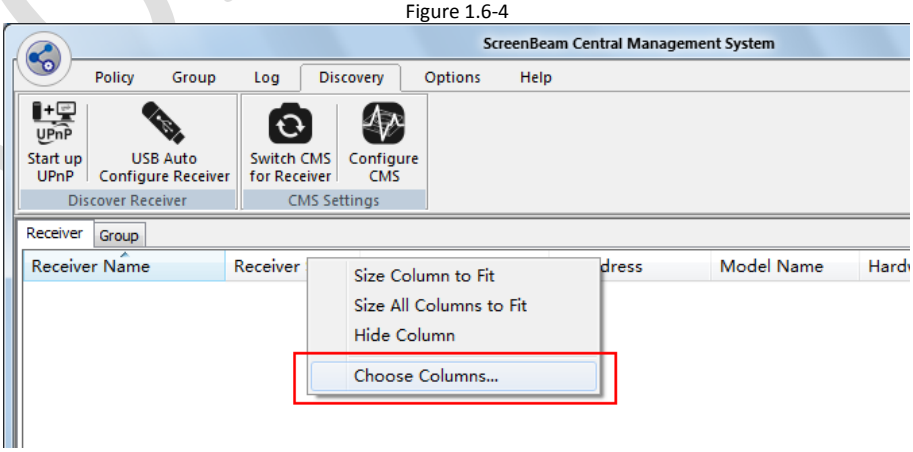
7. Move your mouse pointer to any column on the column header bar. The pointed column will be highlighted.

Figure 1.6-3



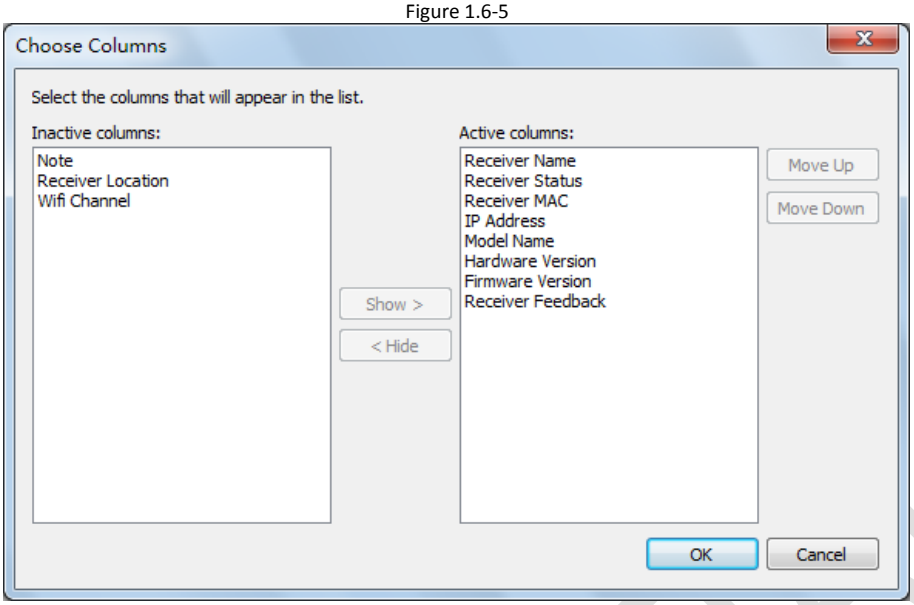
8. Right-click the column. A shortcut menu is displayed.
9. Select “Choose Columns” from the shortcut menu.

Figure 1.6-4



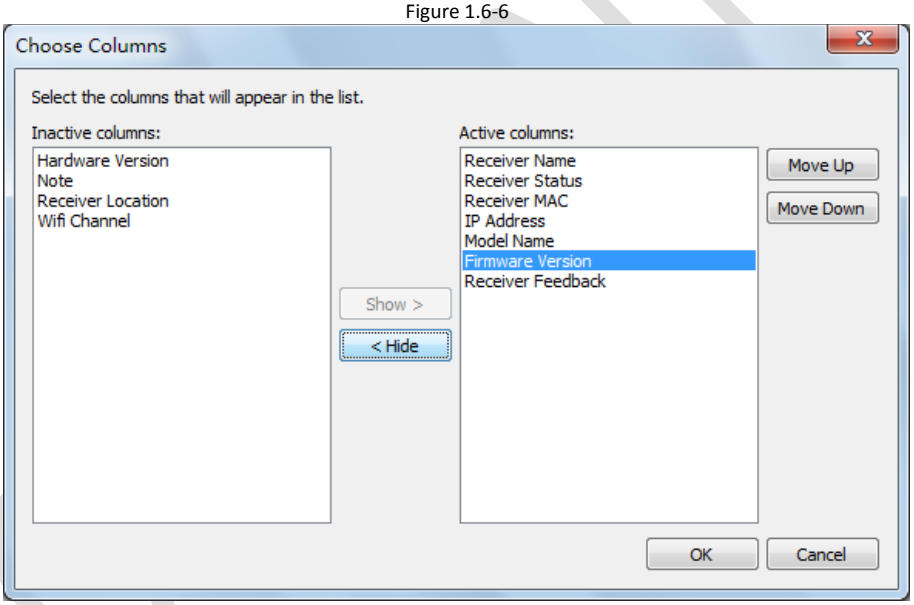
10. The “**Choose Columns**” window appears.

Figure 1.6-5



11. Select one or more columns in the **Active Column** pane, and click the **Hide** button to move these columns to the **Inactive Column** pane. Click **OK** to hide the selected columns.

Figure 1.6-6



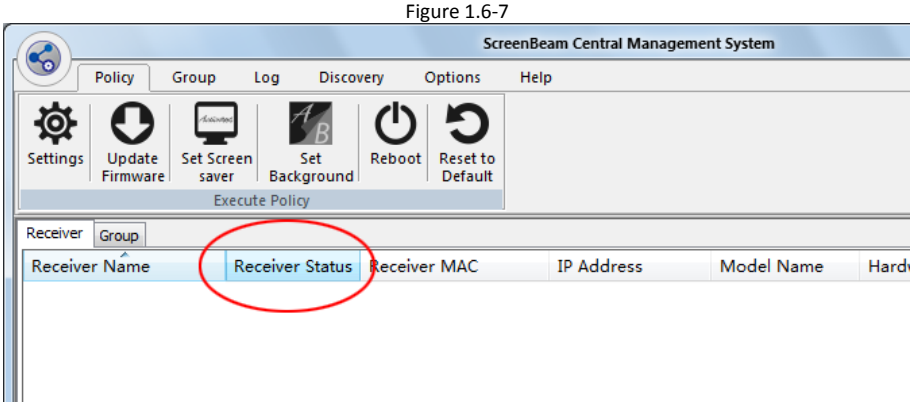
12. Do the opposite to show the desired columns.

1.10.3 Arrange Sequence for Active Columns

Follow the procedure below to hide or show more than one columns,

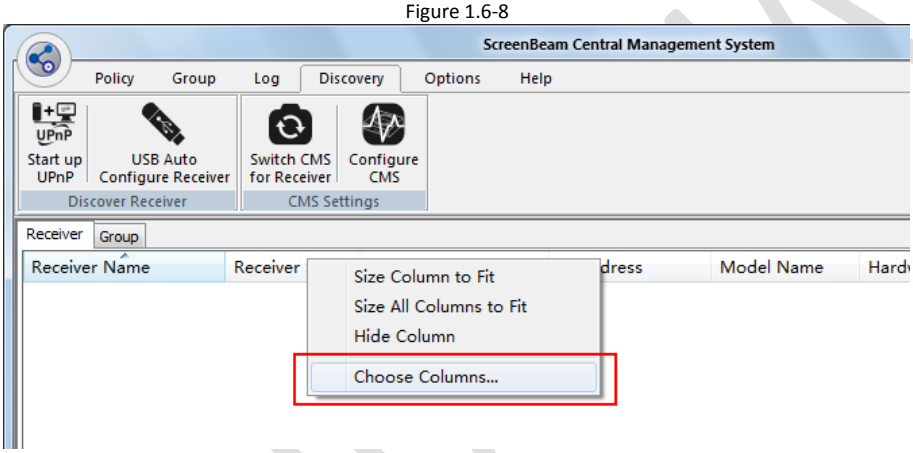
7. Move your mouse pointer to any column on the column header bar. The pointed column will be highlighted.

Figure 1.6-7



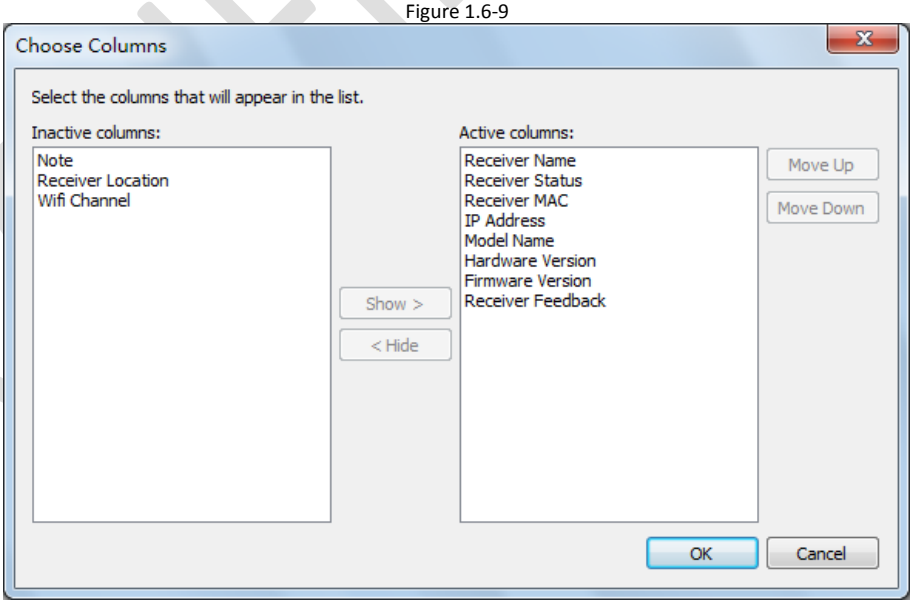
8. Right-click the column. A shortcut menu is displayed.
9. Select “Choose Columns” from the shortcut menu.

Figure 1.6-8



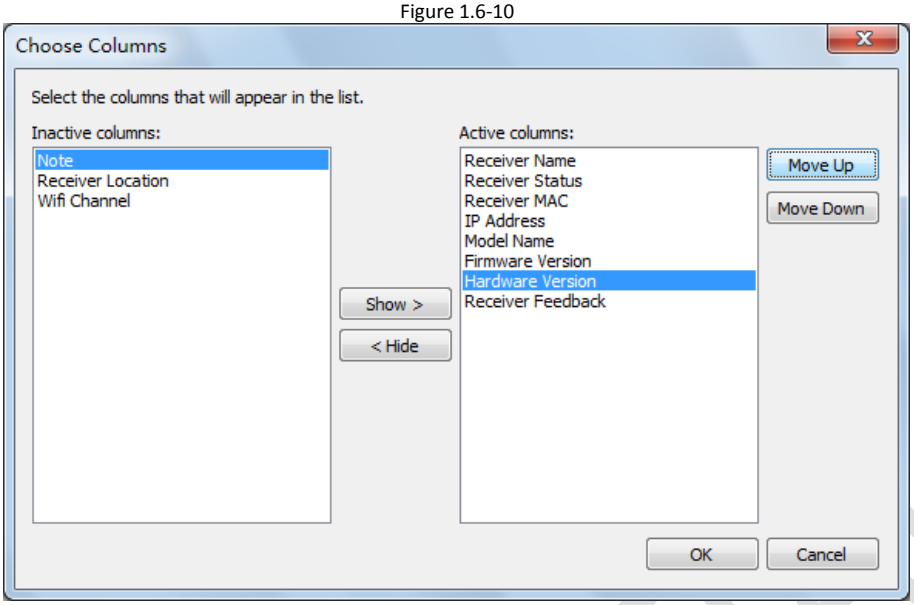
10. The “**Choose Columns**” window appears.

Figure 1.6-9



11. Select the desired column and click the “**Move Up**” or “**Move Down**” button to arrange the sequence.

Figure 1.6-10



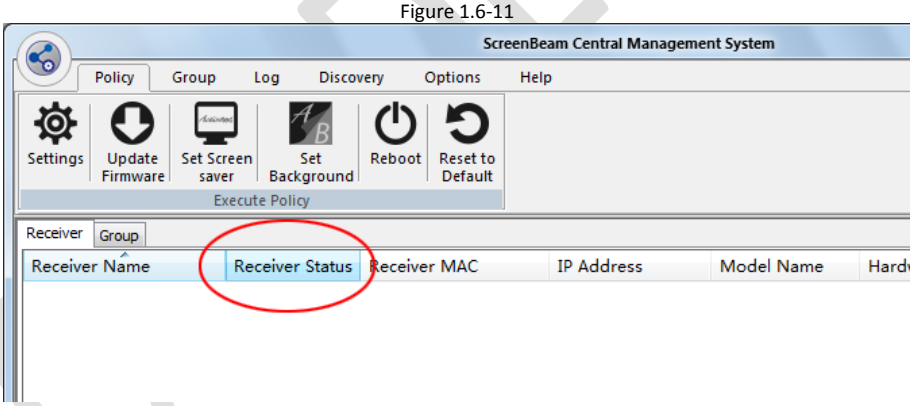
12. Repeat the step above the arrange sequence for other columns. Click **OK** to confirm.

1.10.4 Adjusting Size for a Column

Follow the procedure below to adjust size for a column,

5. Move your mouse pointer to the desire column. The column will be highlighted.

Figure 1.6-11



6. Right-click the column. A shortcut menu is displayed.
7. Select “Size Column to Fit” from the shortcut menu.

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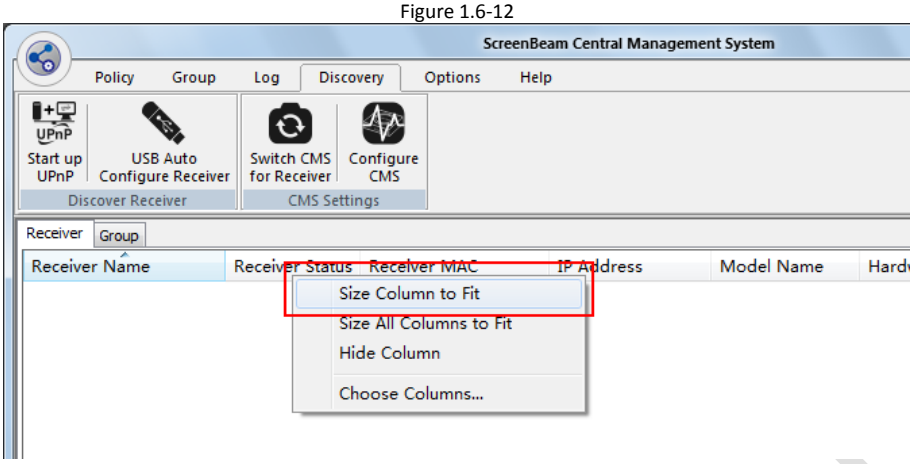
Figure 1.6-12



8. The selected column will be adjusted to fit the size of its content.

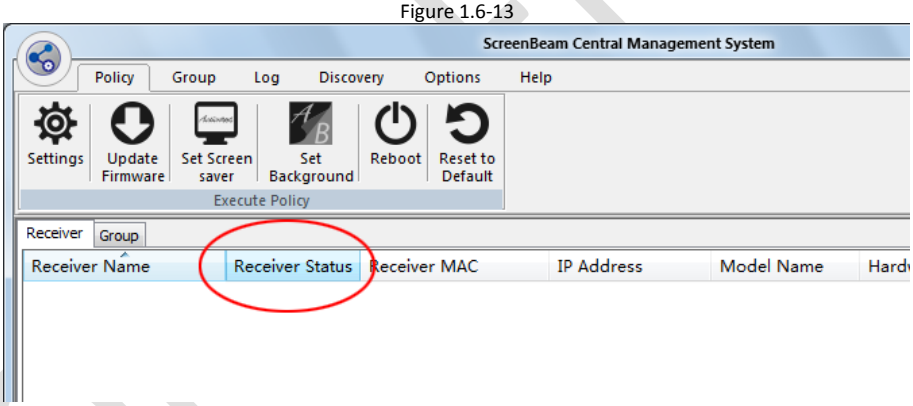
Note: You can also adjust the size of a column by dragging the right separator of that column.

1.10.5 Adjusting Size for all Columns

Follow the procedure below to adjust size for all columns,

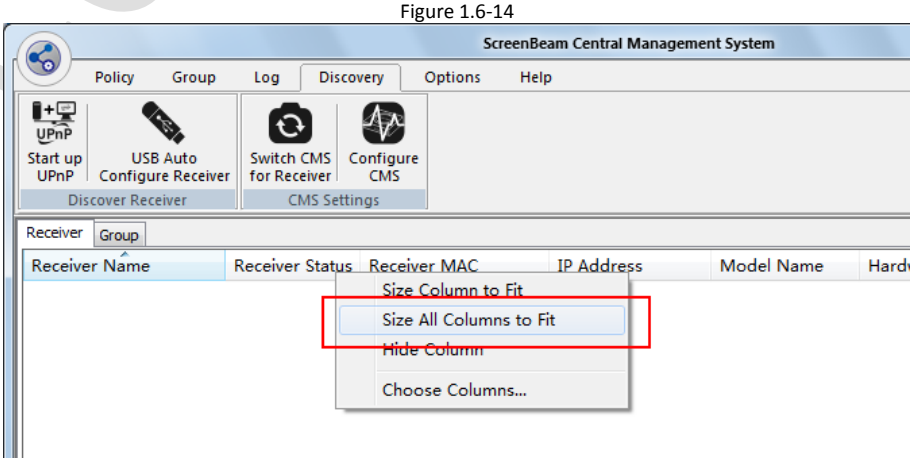
5. Move your mouse pointer to any column on the column header bar. The pointed column will be highlighted.

Figure 1.6-13



6. Right-click the column. A shortcut menu is displayed.
7. Select “Size All Columns to Fit” from the shortcut menu.

Figure 1.6-14



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8. The active columns will be adjusted to fit the size of their content.

Setting up the Close Button Behavior for details.

3. Select **Exit immediately** and click **OK** to close the software.

You can also close the CMS with the method below:

Click the button in the upper left corner and select **Exit** to close the CMS software.

Figure 1.10-1

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Section 2

Setup the Receivers

You must connect each ScreenBeam receiver to the network with the Actiontec USB-to-Ethernet adapter (model SBETH100) or ScreenBeam USB Transmitter and have the receivers powered on. The receiver will obtain an IP address automatically if a DHCP server is available.

2.1 Hardware Connection

There are two solutions for connecting ScreenBeam Pro to the CMS server: wired and wireless.

2.1.1 Wired Connection

In order for the ScreenBeam CMS server to communicate with the ScreenBeam Receivers, each receiver must be connected to the network using a USB-to-Ethernet adapter (Model: SBETH100).

Follow the procedure below to connect the receiver to a CMS server:

1. Connect the USB-to-Ethernet adapter to the USB port on the ScreenBeam Receiver.

Figure 2.1-1. Example of Education Edition 2 receiver with USB-to-Ethernet adapter

2. Connect one end of an Ethernet cable to the port on the USB-to-Ethernet adapter.
3. Connect the other end to a port on your router/switch/hub on your network.

2.1.2 Wireless Connection

Follow the procedure below to connect the receiver to a CMS server:

1. Prepare and properly configure a wireless router (AP). Then deploy this router in your network.
2. Plug the ScreenBeam Transmitter to the USB port of ScreenBeam Pro.

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Figure 2.1-2. Example of Education Edition 2 receiver with USB-to-Wireless adapter

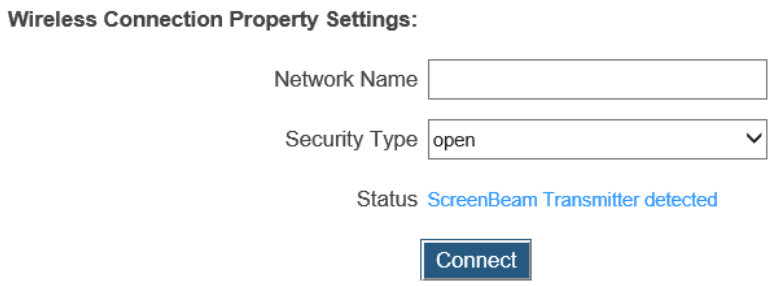
3. Power on ScreenBeam Pro, and log into the local management web server of the receiver. Refer to the receiver's user manual for details.

4. Go to the **Remote Management** tab page.

Figure 2.1-3

5. Properly configure the wireless connection parameters in the "Wireless Connection Property Settings" section.

Figure 2.1-4



- **Network Name**: The SSID of the wireless router (AP).
- **Security Type**: Select a security type, the one you have selected on your wireless router. Available security types are Open, Shared, WPA-Personal, WPA2-Personal, WPA2-Enterprise (802.1x), PEAP/MsCHAPv2.
- **User Name:** This is for authentication through a RADIUS server.
- **Password**: The password for the wireless SSID.
- **Status**: It displays the connection states

Note: These settings must match those on the wireless router (AP).

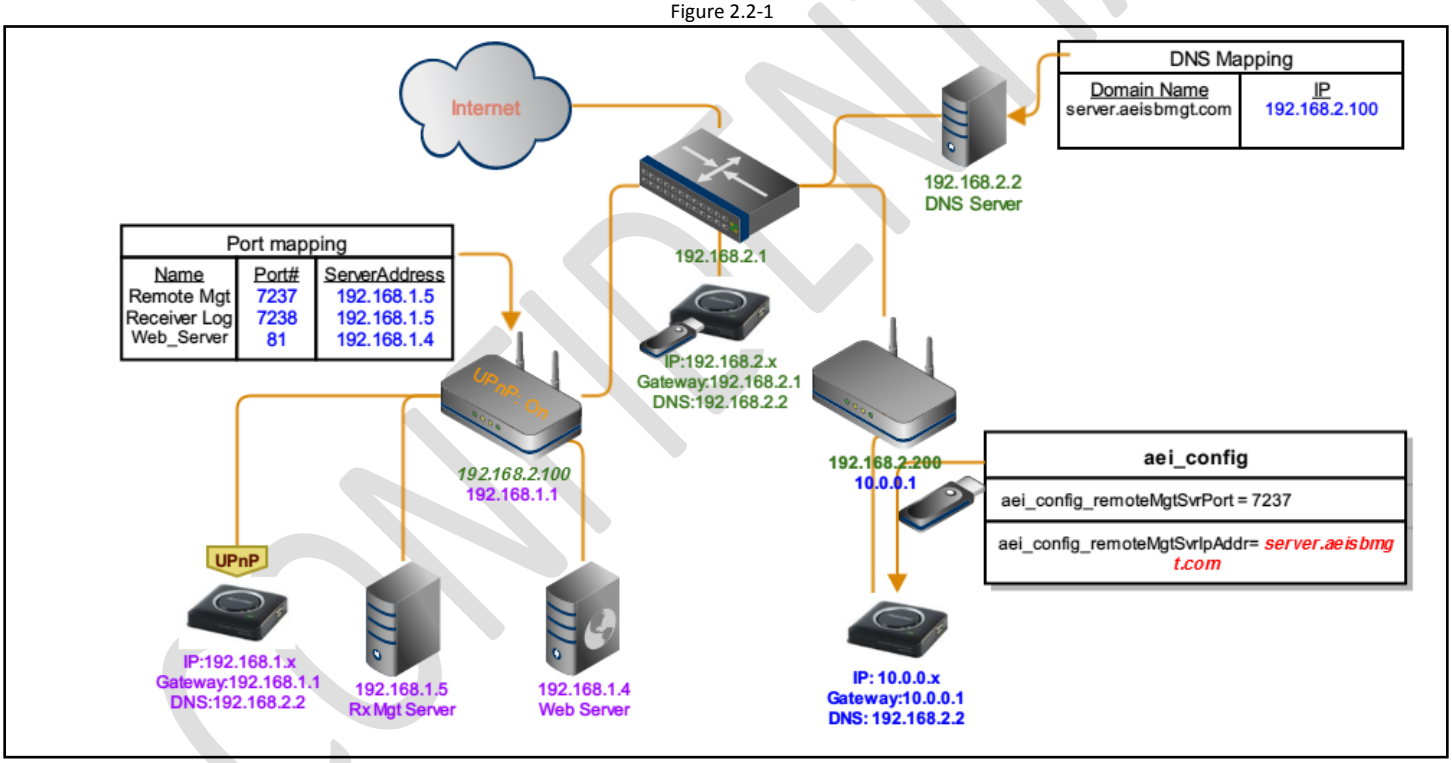
6. Click the **Connect** button, and then the transmitter will connect to the wireless router (AP).

2.2 Network Topology

The figure below shows a sample network topology. It shows different receivers in various levels of the network and how each device is configured to maintain communication between the receiver and the CMS server.

- Router 192.198.2.1 is at the highest level
- Routers 192.168.2.100 and 192.168.2.200 are 2nd level and assigned IP addresses from Router 192.198.2.1
- The CMS server, Firmware Update Server, and a ScreenBeam Receiver are in the network segment created by router 192.168.2.100. This receiver can be discovered using UPnP.
- Port forwarding is set up for the two servers: 7237, 7238 to the CMS server and 81 for the Web server
- Corporate DNS server has IP 192.168.2.2. The domain *server.aeisbcms.com* is entered and routed to IP 192.168.1.5.
- The remaining receivers, outside of the local LAN where the CMS resides, must be configured with the CMS port and WAN IP of the router the CMS server is connected to.

Figure 2.2-1



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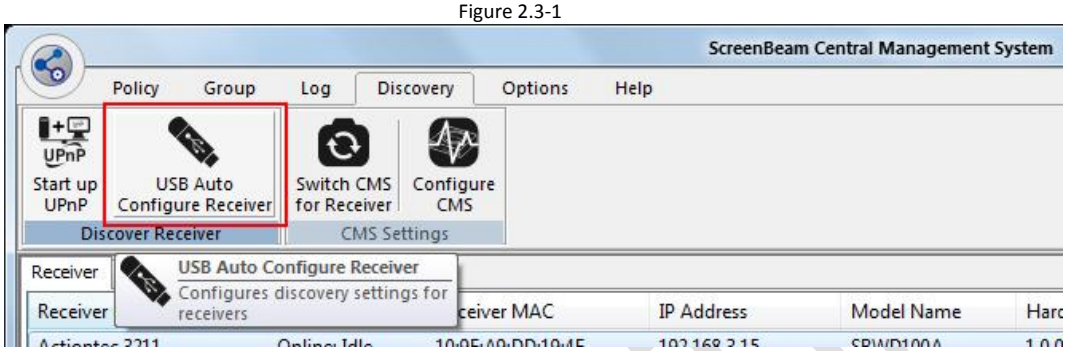
2.3 Configuring a Receiver's Network Interface

ScreenBeam receivers are set to acquire an IP address using DHCP by default (recommended). However, you can set a static IP and define a DNS server for each receiver. Follow the procedure below to set up a receiver's network interface using a USB flash drive:

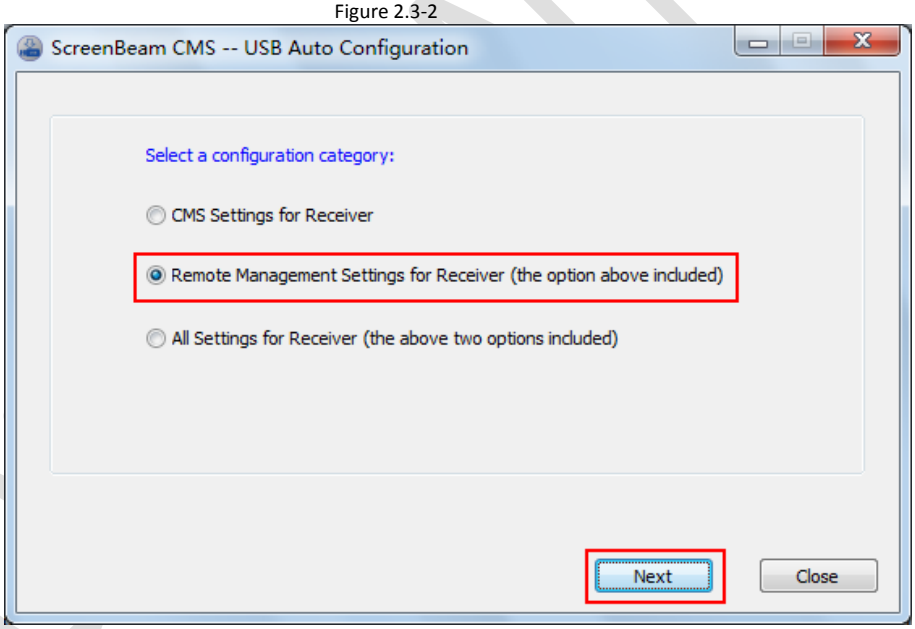
1. Connect a USB flash drive to a USB port on the CMS server.
2. Open the CMS software, go to the **Discovery** tab, and click the **USB Auto Configure Receiver** button.

Figure 2.3-1



3. The **ScreenBeam CMS – USB Auto Configuration** window appears.

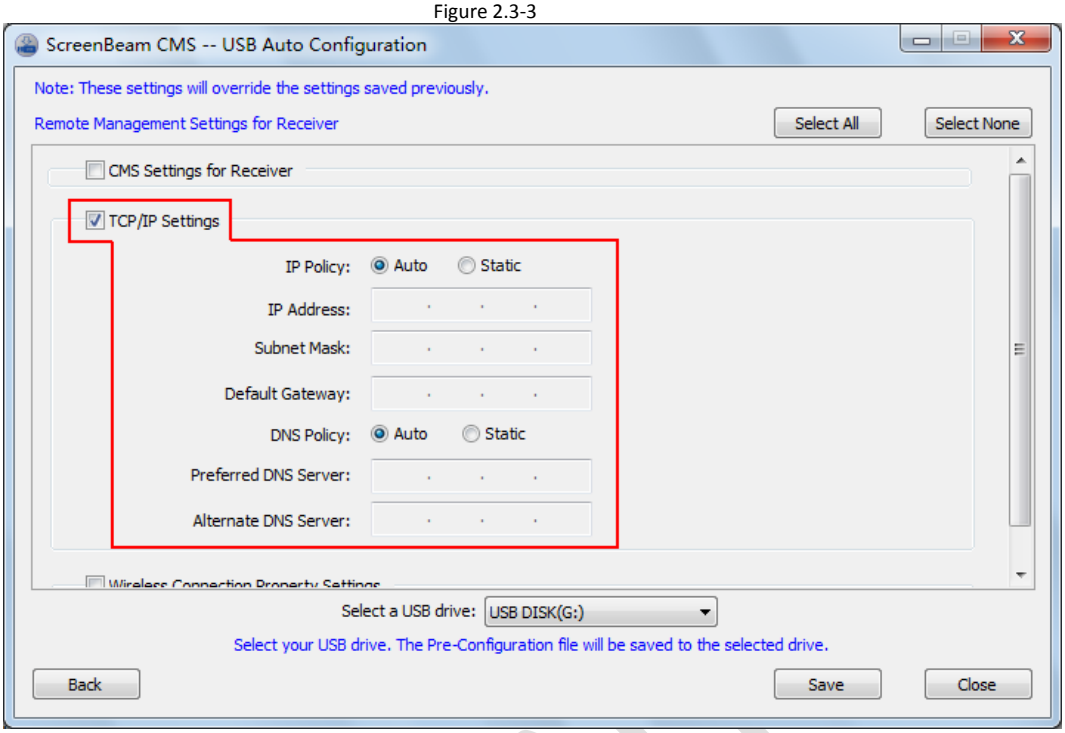
Figure 2.3-2



4. Select the **Remote Management Settings for Receiver** option and click the **Next** button to continue.
5. The **Remote Management Settings for Receiver** page appears. Select the **TCP/IP Settings** option, and configure IP and DNS settings.

- **Auto (IP Policy/DNS Policy)**: When you choose this option, the receiver will obtain an IP address and a DNS server IP address automatically from the network DHCP server.
- **Static (IP Policy/DNS Policy):** When you choose this option, you can define an IP address and a DNS server IP address for the receiver.

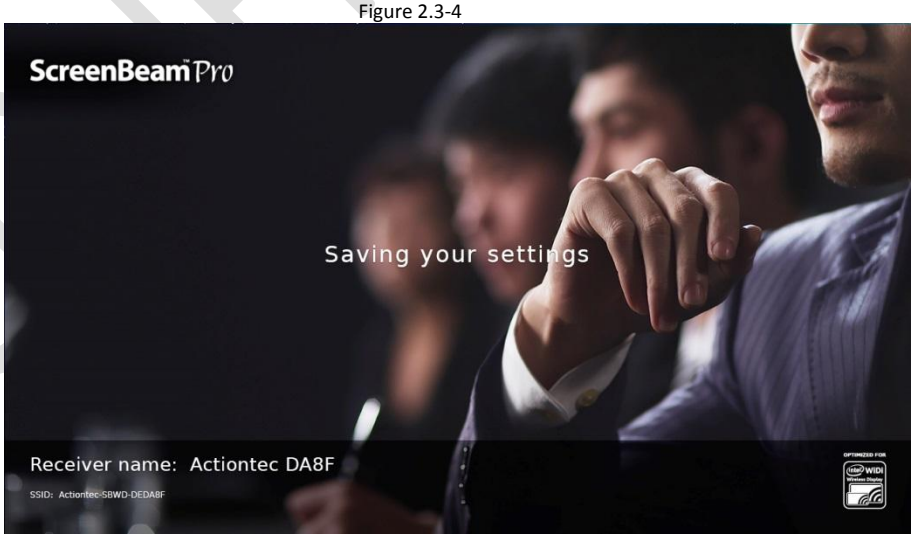
Figure 2.3-3



6. Select your USB flash drive in the **Select a USB drive** drop-down box, and then click **Save** to save the settings to the selected USB flash drive.
7. Safely remove the USB flash drive from the server and then plug it to the receiver.

   Note: The receiver must be in the idle state. You may disconnect the USB-to-Ethernet adapter at this point if it is connected to the receiver.
8. The receiver configures itself with the settings saved in the USB flash drive, and reboots. The configuration status will be displayed on the display device where the receiver is connected.

Figure 2.3-4



9. After the reboot, the receiver is configured successfully. You can check the IP address of the receiver, which is displayed on the connected display device.
10. Remove the USB flash drive from the receiver and reconnect the USB-to-Ethernet adapter to connect the receiver to the network.

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Section 3

Discovering Receivers

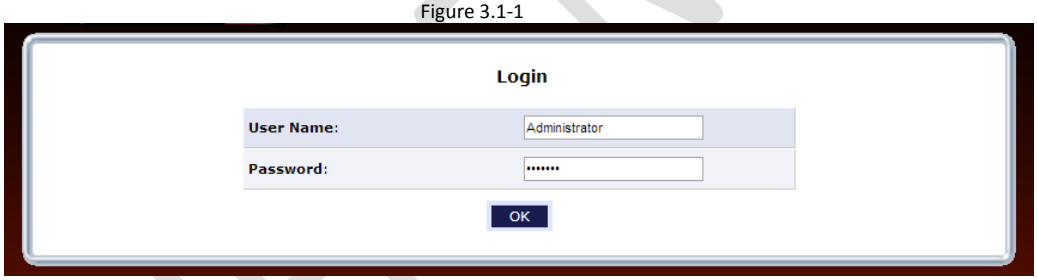
The following section will help you discover and add ScreenBeam receivers to your CMS server. There are three methods to discovering receivers: DNS Discovery, UPnP, or USB Drive method. DNS Discovery is the recommended method, but requires a corporate DNS that you can manage. UPnP will work for receivers that are in the same local network as your CMS server. Otherwise, you will have to use the USB method. We will guide you through using each method below.

3.1 Setup Port Forwarding

You must set Port Forwarding on the router the Central Management Server is connected. The following are generic steps for setting up port forwarding. Please refer to your router manual for specific instructions.

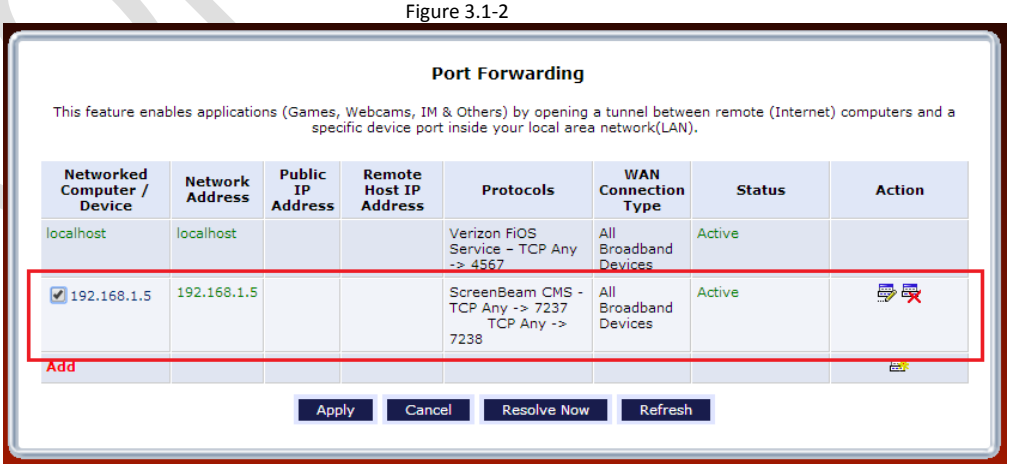
1. Login to the router's management page.

Figure 3.1-1



2. Navigate to the Port Forwarding section.
3. Add an entry, with the server IP address set to the IP address of the computer running the ScreenBeam CMS software. You will need forward both the **CMS Server Port** and the **Log Server Port**.

Figure 3.1-2



Note: The server must be assigned with a fixed IP address.

Note: For more information about the CMS server's port number, refer to Section 1.4 - Installing the Software.

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3.2 DNS Discovery

The DNS Discovery method is the simplest way to have all your ScreenBeam receivers discovered by the CMS server. It requires very little user interaction once your network is configured properly.

Note: You should carefully plan your network. In a DNS environment, changing IP address may take a long time (hours to days) to take effect.

3.2.1 Configure DNS and DHCP Servers

ScreenBeam Pro Wireless Display Receiver supports DHCP Option 15. They can obtain domain information from the DHCP server automatically.

1. Add a DNS record for the ScreenBeam CMS host to your corporate DNS server.

Figure 3.2-1

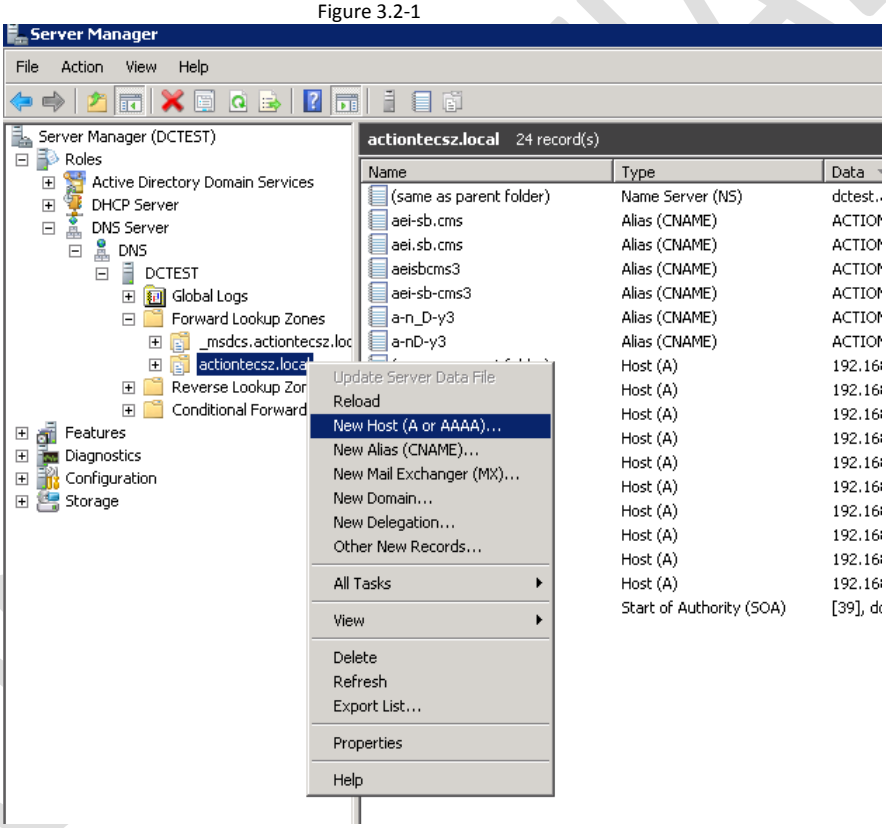
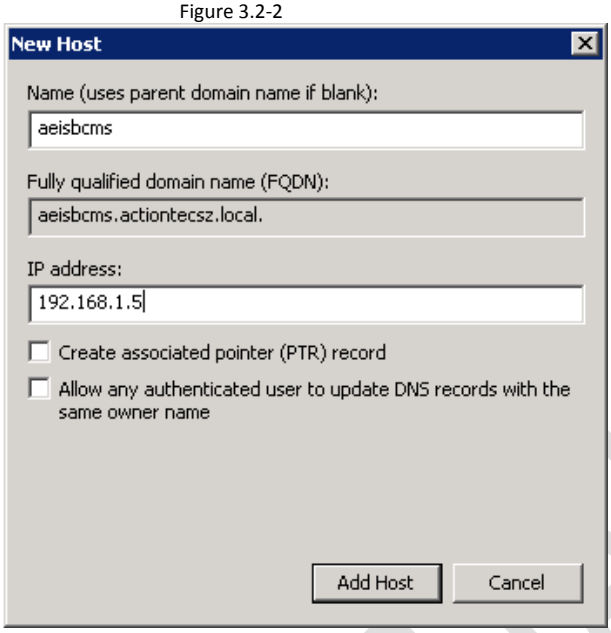


Figure 3.2-2



Note:

- The default hostname for the CMS is "**aeisbcms**". By default, ScreenBeam Pro Wireless Display Receivers will resolve this hostname first.
- ScreenBeam receivers can resolve a domain name with six labels at most.

If your ScreenBeam CMS hostname is too long or difficult to remember, you can add an alias name (CNAME) for the ScreenBeam CMS host.

Figure 3.2-3

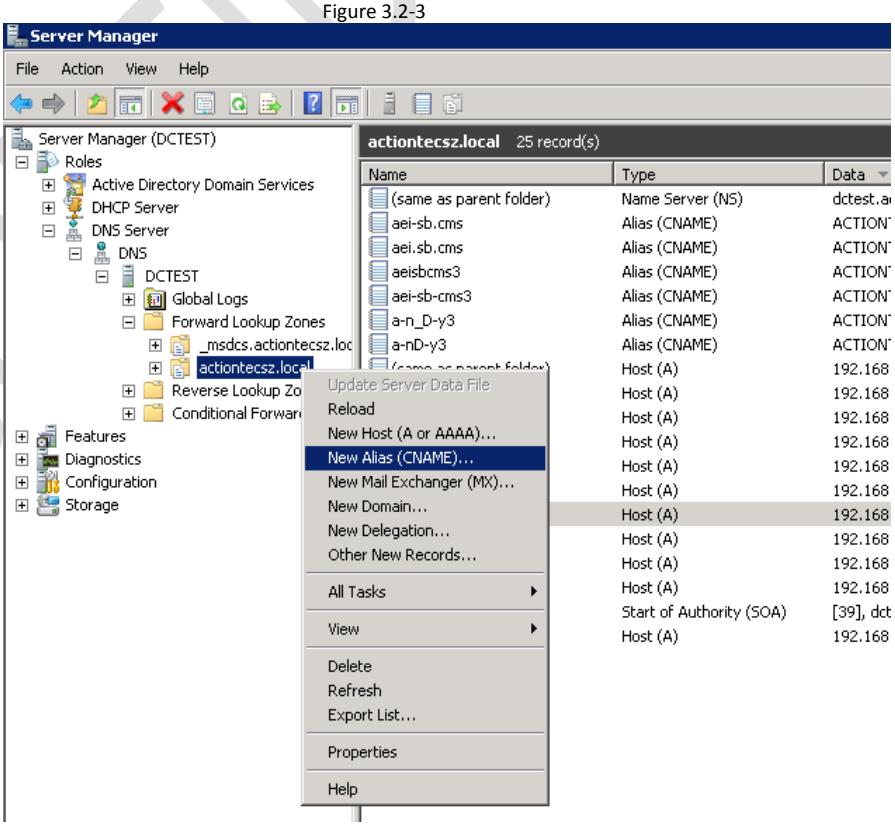


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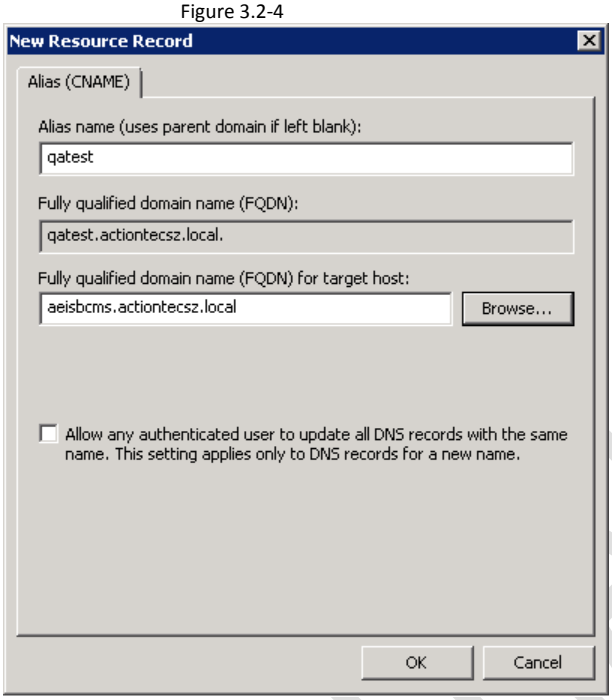
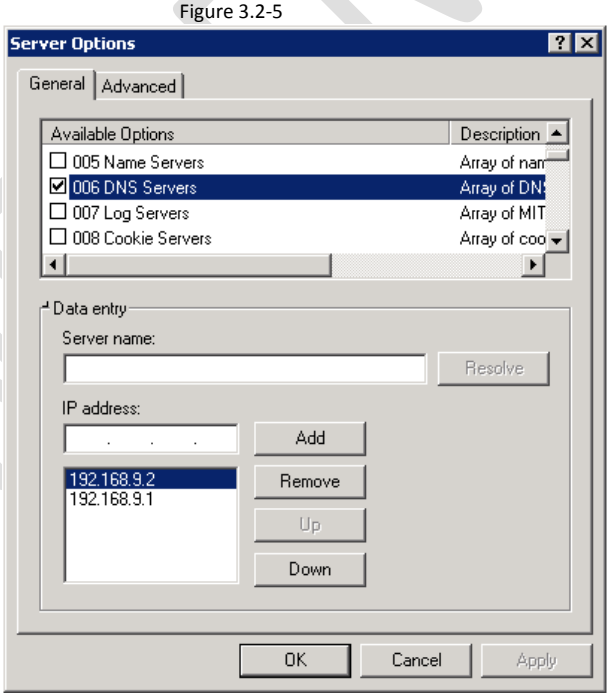
Figure 3.2-4



2. Configure the DHCP servers used to provision network addresses to the ScreenBeam receivers to assign this DNS to its clients. Define the DNS server and the address pool.

Figure 3.2-5



3. Enable the Option 15 in the DHCP server, and define the domain that you use to manage the receivers.

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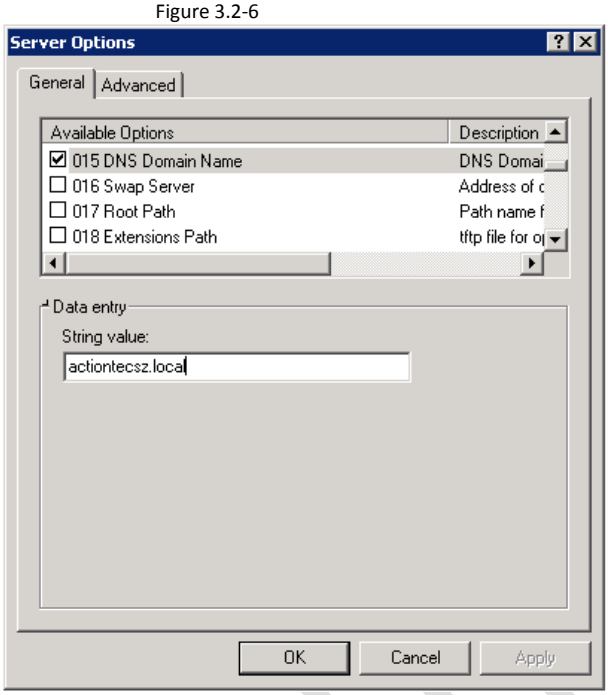
Figure 3.2-6

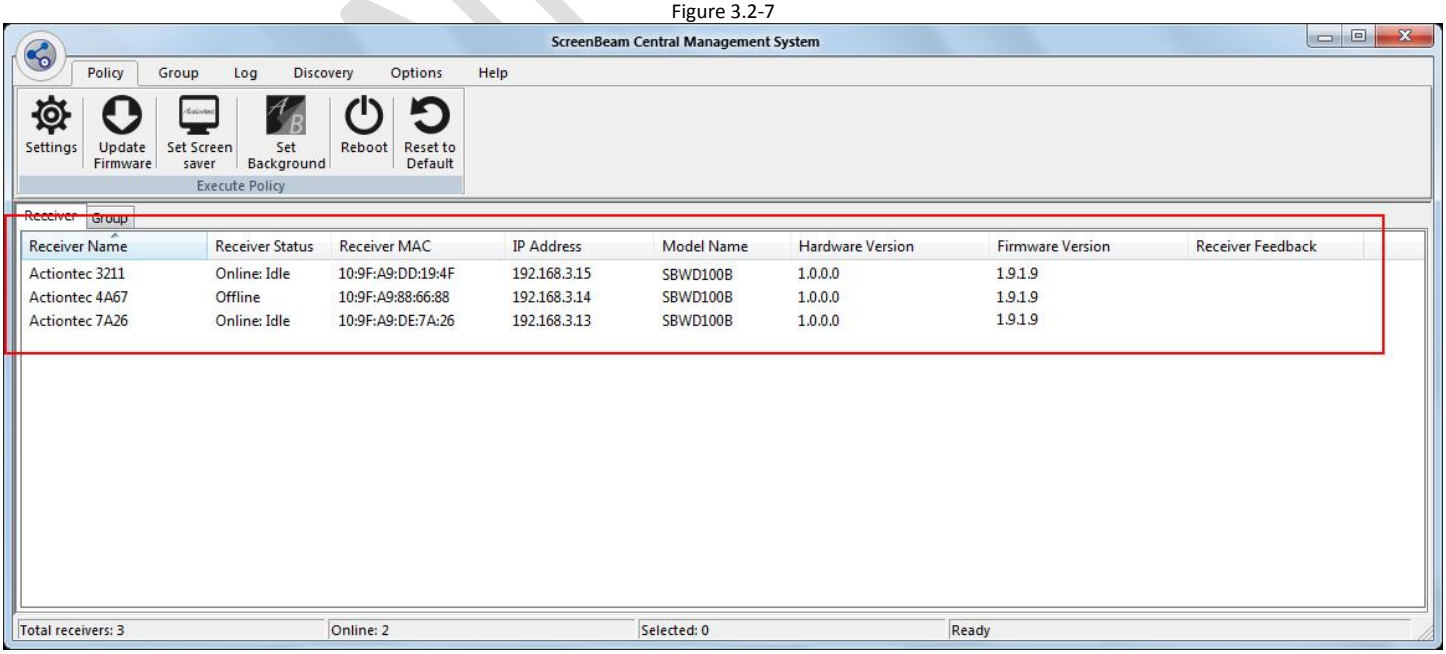


Note: If Option 15 is not available on your DHCP server, neglect this step. In this case, you need to use the Full Qualified Domain Name (FQDN).

3.2.2 Deploy the ScreenBeam Receivers

1. Launch the ScreenBeam CMS software.
2. Verify your ScreenBeam receivers are powered on and connected to your network through the USB-to-Ethernet adapter.
3. When the receivers are assigned an IP they will automatically connect to the CMS server. You should see the ScreenBeam receivers appear listed on the Receiver Pane on the CMS software.

Figure 3.2-7



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3.3 UPnP Discovery

UPnP may be the quickest method to discovering your ScreenBeam receivers. However, this method will only work if the CMS server and your ScreenBeam receivers are all on the same local network. You must first turn on UPnP in Windows and the routers before performing the UPnP discovery.

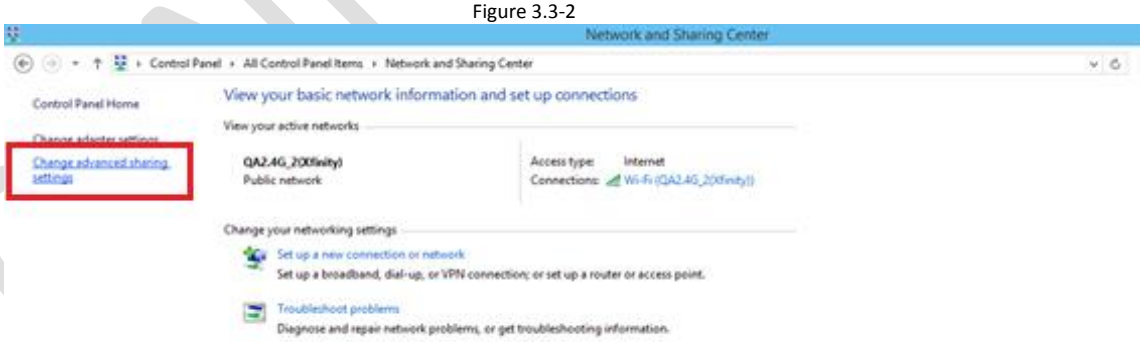
3.3.1 Turning on UPnP in Windows

1. In Windows open Control Panel, locate and select **Network and Sharing Center**

Figure 3.3-1

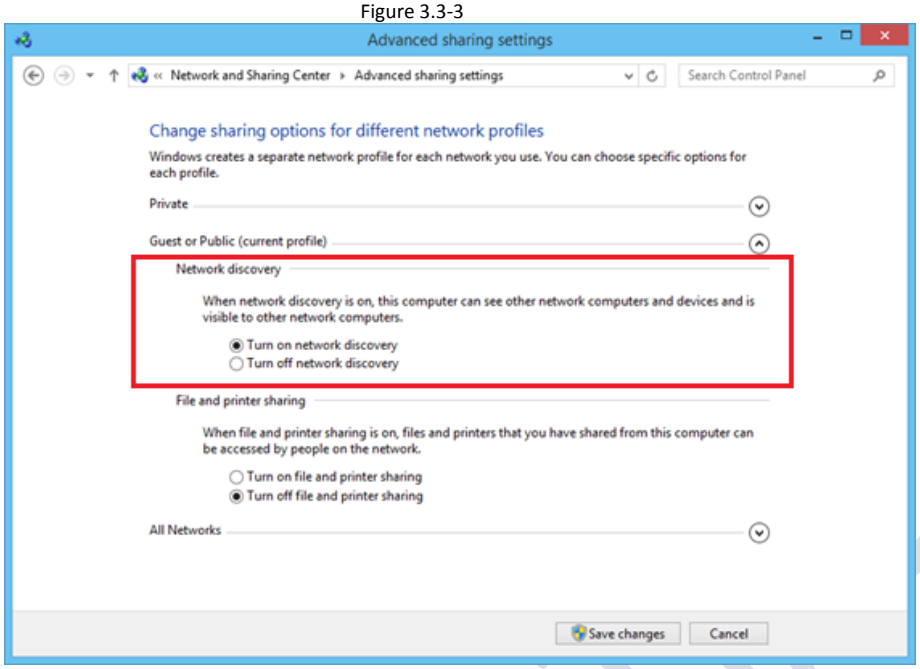
2. In the left pane, click the link for **Change advanced sharing settings**

Figure 3.3-2



3. In the Network discovery section, select the option for Turn on network discovery

Figure 3.3-3



4. Click **Save changes** to save the settings

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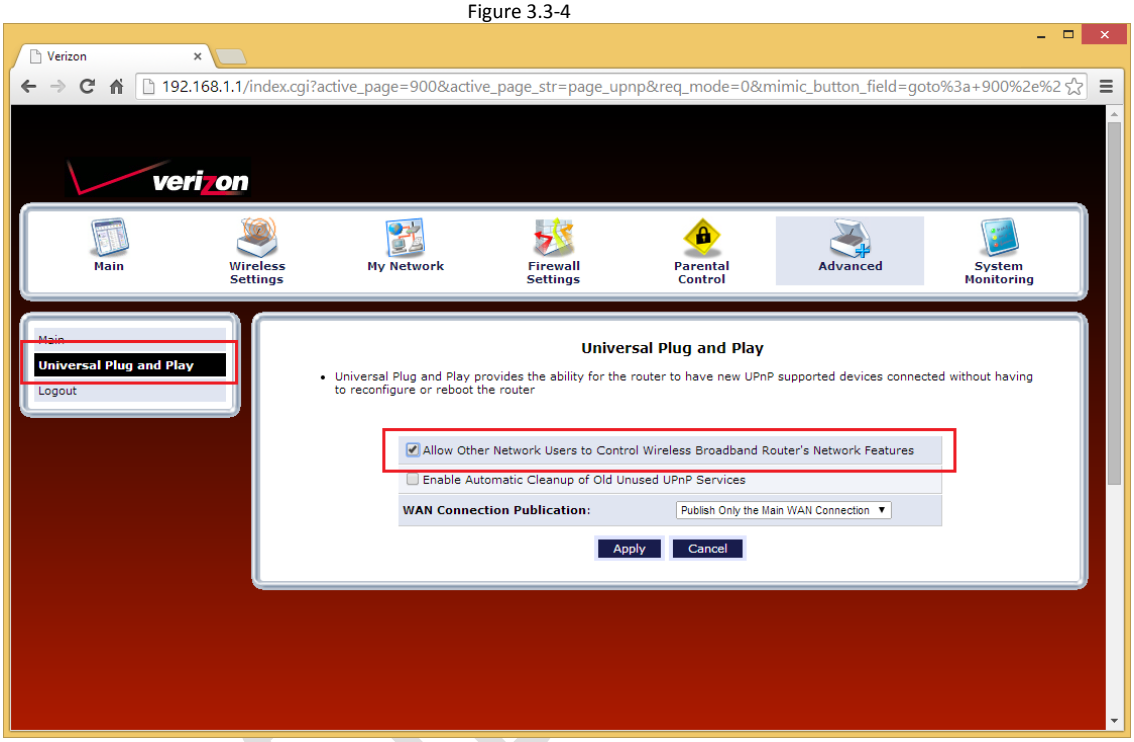
3.3.2 Turning on UPnP in the Router

Make sure your router provides the UPnP function. Follow the procedure below to turn on the UPnP function in Windows:

1. Access the router's management page.
2. Go to the UPnP section.
3. Check the "Turn UPnP On" box.

Figure 3.3-4

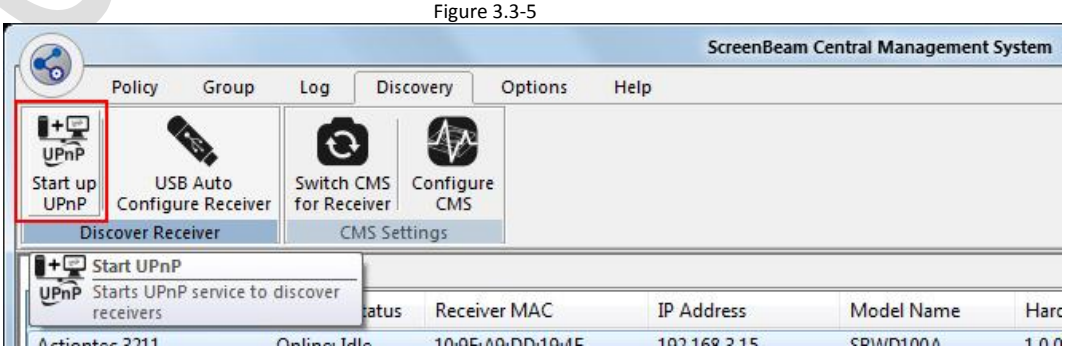


3.3.3 Discover Receivers Using UPnP

If the Central Management System server and the receivers are all in the same local network segment, the receivers can discover and report to the management server automatically when the server has UPnP enabled. Follow the procedure below to discover your receivers with UPnP function.

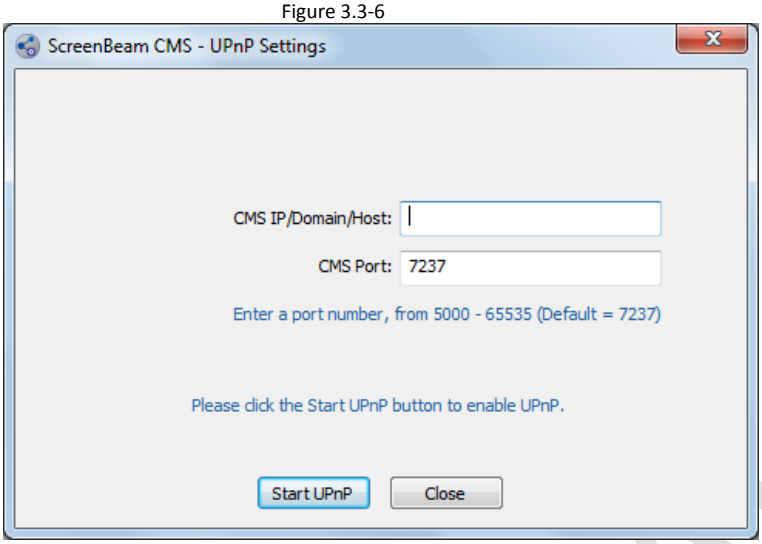
1. Launch the CMS software.
2. Select the **Discovery** tab, and click the **Start up UPnP** button.

Figure 3.3-5



3. The **ScreenBeam CMS – UpnP Settings** box appears.

Figure 3.3-6



4. Properly configure **CMS IP/Domain/Host** and **CMS Port**. Click the **Start UPnP** button to start the UPnP function on the CMS server.

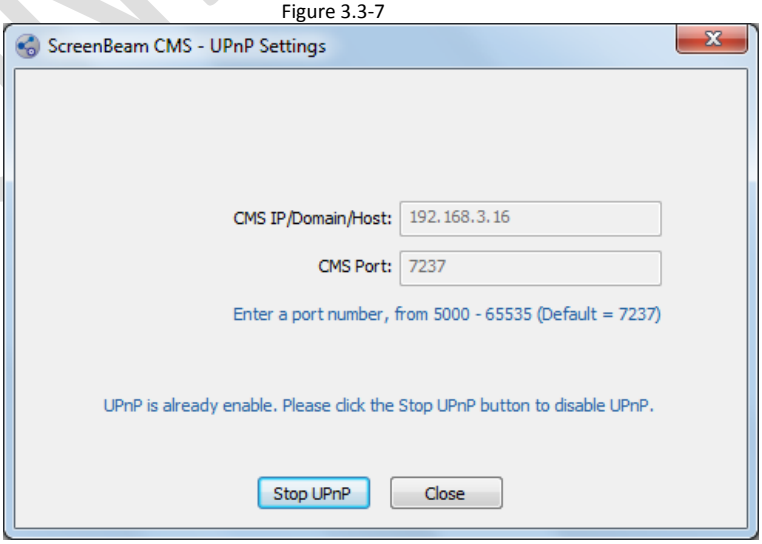
   - **CMS IP/Domain/Host:** It is the IP address, or FQDN/hostname/domain name/alias name of the new CMS server. Enter the IP address, or FQDN/hostname/domain name/alias name of the new CMS server (if you have properly configured the DNS server and the DHCP server).
   - **CMS Port:** Receivers communicate with the CMS through this port. Enter a port number for communication with the CMS server.

5. The receivers will discover and report to the CMS server. This process may take several minutes. After the receiver connects to the CMS server, its state changes to "Connected to CMS: xxx.xxx.xxx.xxx", which is displayed on the HDTV.

   Note: You must enable the SSDP Discovery service in the operating system for this feature to work properly. See Section 1.3 – Preparing the System for details.

6. If you want to stop UPnP Discovery, open the **ScreenBeam Central Management System – UpnP Settings** box again, and click the **Stop UPnP** button.

Figure 3.3-7



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3.4 Discover Receivers Using a USB Drive

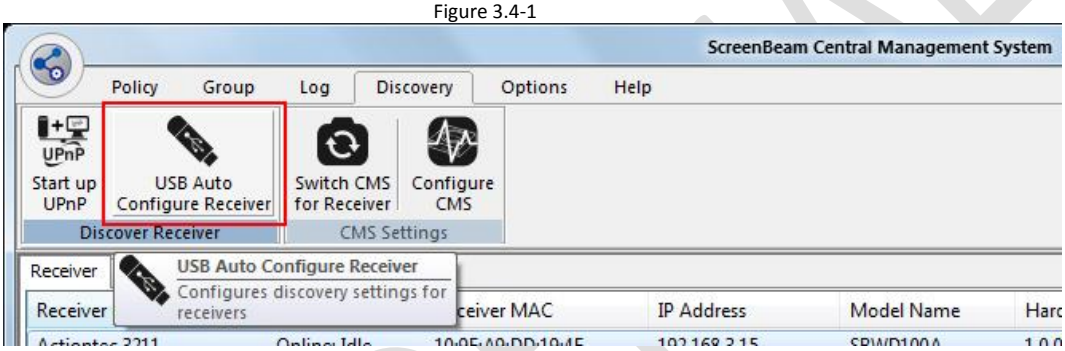
If UPnP, or DNS Discovery, are not available methods for discovering your receivers, you will need to manually configure each receiver using a USB flash drive. This only needs to be done once during initial setup. Once set, the receivers can be configured remotely using the CMS software.

Note: Before configuring a receiver with the USB drive, you must properly configure the server (the IP address (or domain name/host name) and port). See Section **8.2 Modify CMS Server Settings** for details.

Follow the procedure below to discover your receivers with a USB flash drive.

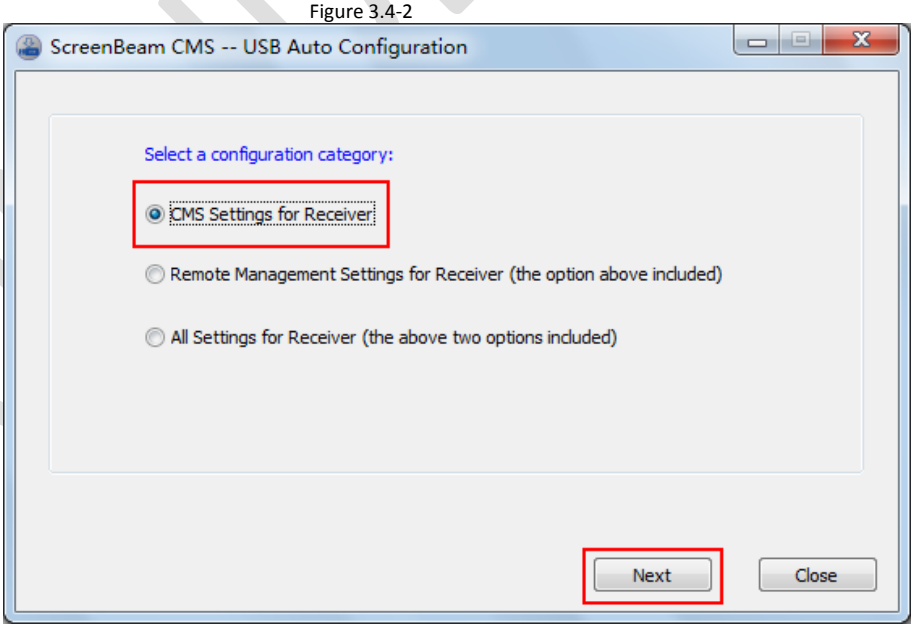
1. Connect a USB flash drive to the CMS server computer.
2. Launch the CMS software and go to the **Discovery** tab.
3. Click the **USB Auto Configure Receiver** button.

Figure 3.4-1



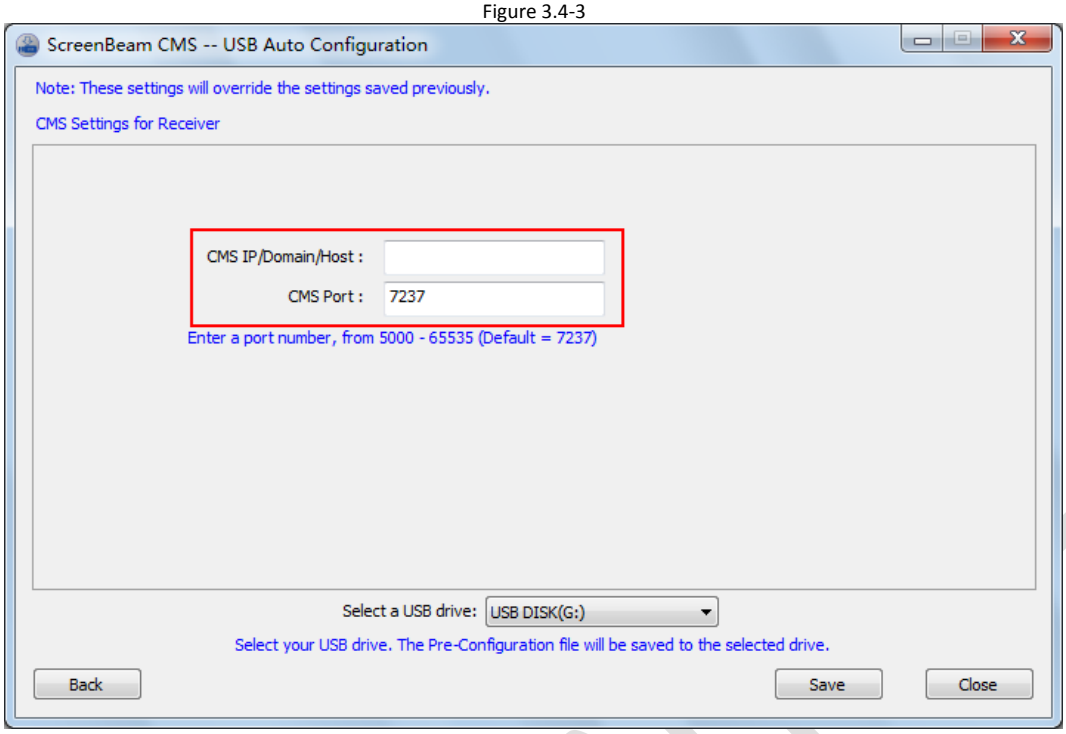
4. The **ScreenBeam CMS – USB Auto Configuration** box appears.

Figure 3.4-2



5. Select the **CMS Settings for Receiver** option, and click the **Next** button to go to **CMS Settings** page.

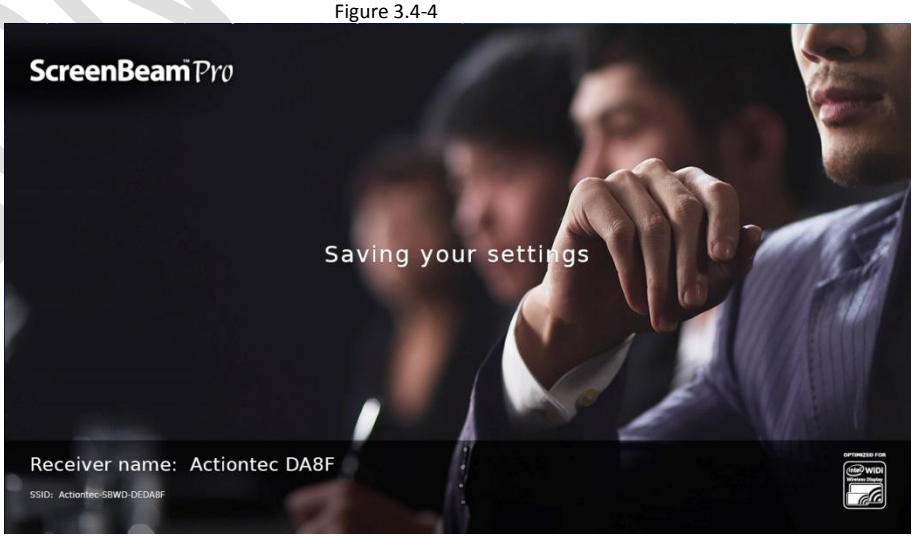
Figure 3.4-3



- **CMS IP/Domain/Host:** It is the IP address, or FQDN/hostname/domain name/alias name of the new CMS server (if you have properly configured the DNS server and the DHCP server).
  Note: The SCMS IP Address is the WAN IP address to which the PC is mapped to, if the PC is behind a NATed router.
- **CMS Port:** Receivers communicate with the CMS through this port.

6. Select your USB flash drive in the **Select a USB drive** drop down, and then click **Save** to save the settings to the selected USB flash drive.
7. Remove the USB flash drive from the CMS server and plug it into the USB port on the ScreenBeam receiver (which is in standby state).
8. The receiver configures itself and will automatically reboot. After the reboot, the receiver is configured successfully.

Figure 3.4-4



9. Remove the USB flash drive from the receiver and connect the receiver to the network.

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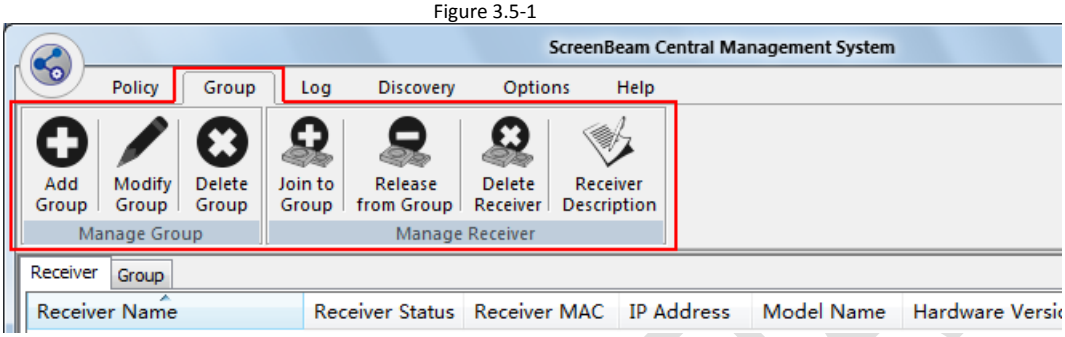
3.5 Deleting Offline Receivers

Disconnecting a ScreenBeam receiver from your network will cause it to appear as “offline” in the CMS software. In the case where such a receiver will no longer be used you can remove it from the Receiver list.

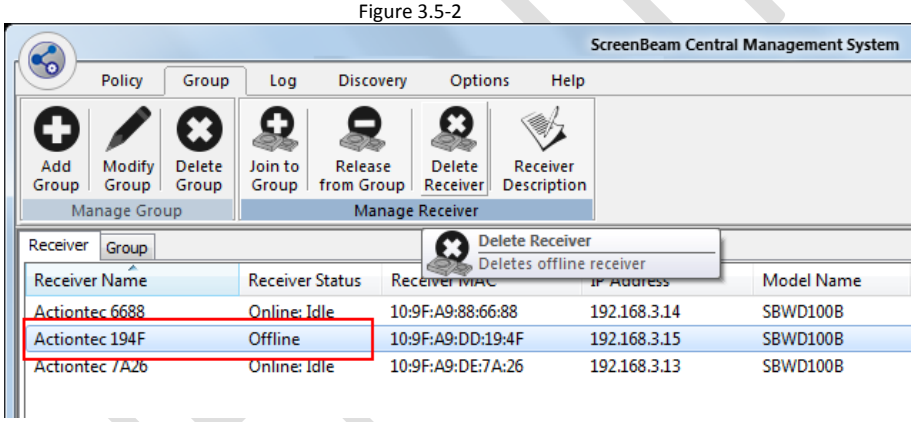
1. Launch the CMS software and go to the **Group** tab.

Figure 3.5-1



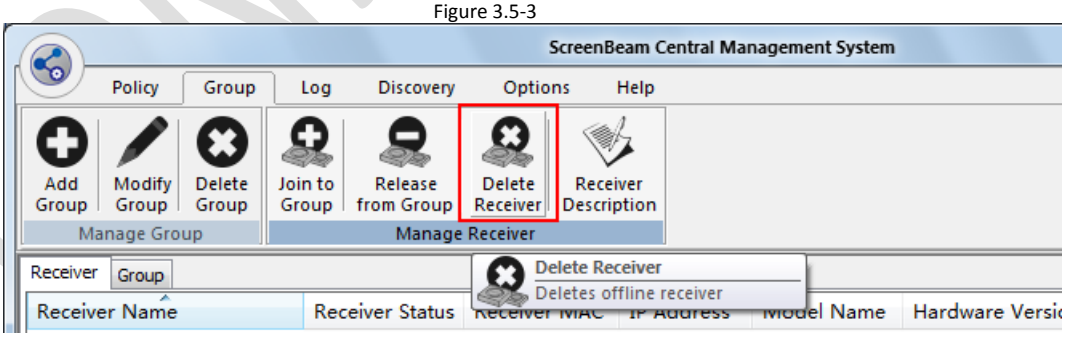
2. From the Receiver list, select the offline receivers you would like to delete.

Figure 3.5-2



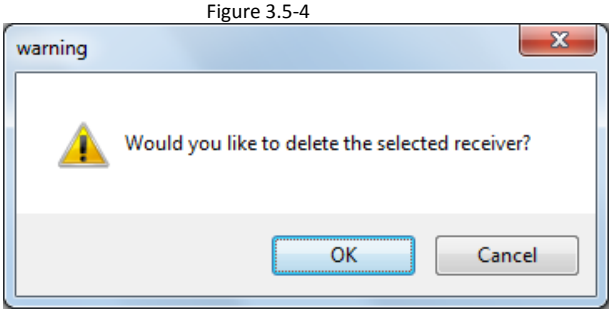
3. Click the **Delete Receiver** button in the Action Bar.

Figure 3.5-3



4. Click **OK** on the confirmation message box.

Figure 3.5-4



5. The selected receivers will be deleted and removed from the Receiver List.

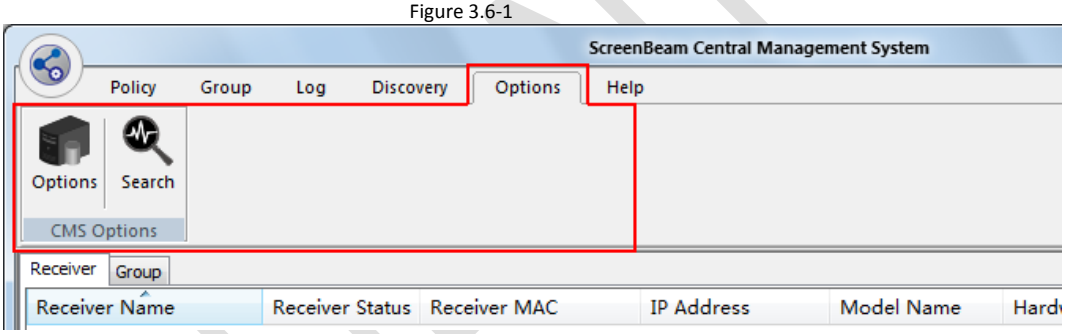
3.6 Locating Your Receiver

With the Search function, you can easily locate specific receivers in case you have deployed a large number of receivers in your system.

Follow the procedure below to locate your receivers,

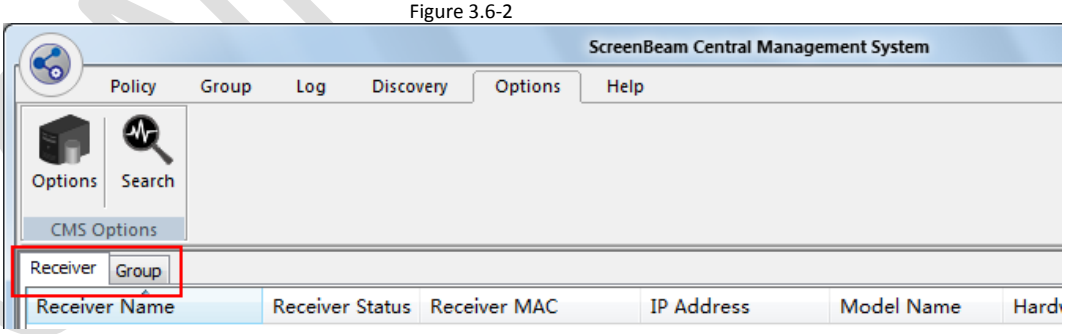
1. Launch the CMS software and go to the **Options** tab.

Figure 3.6-1



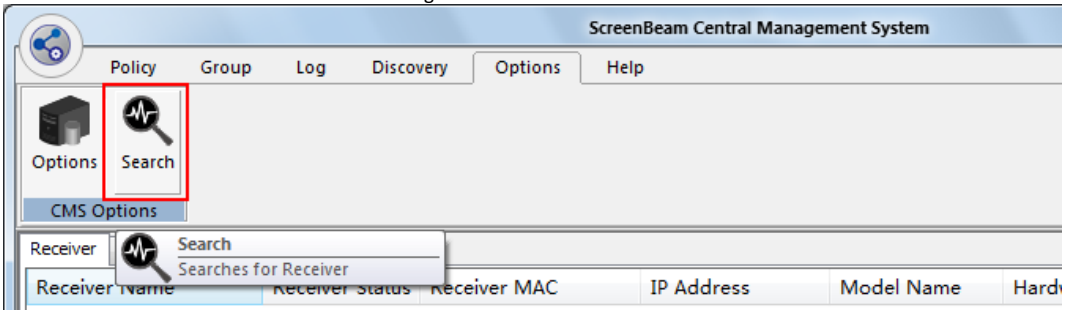
2. Choose the **Receiver** Pane or **Group** Pane (or a specific group).

Figure 3.6-2



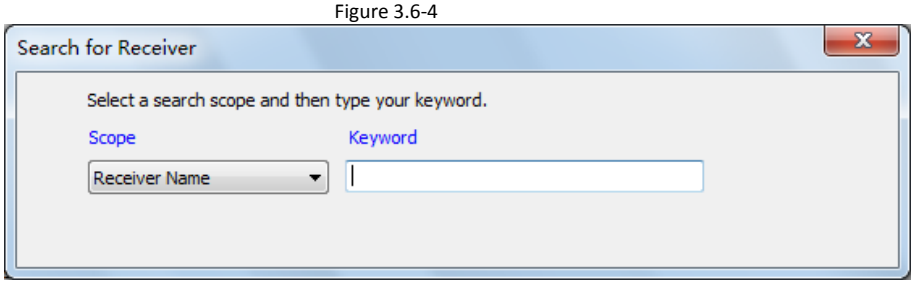
3. Select the **Search** button from the Action Bar.

Figure 3.6-3



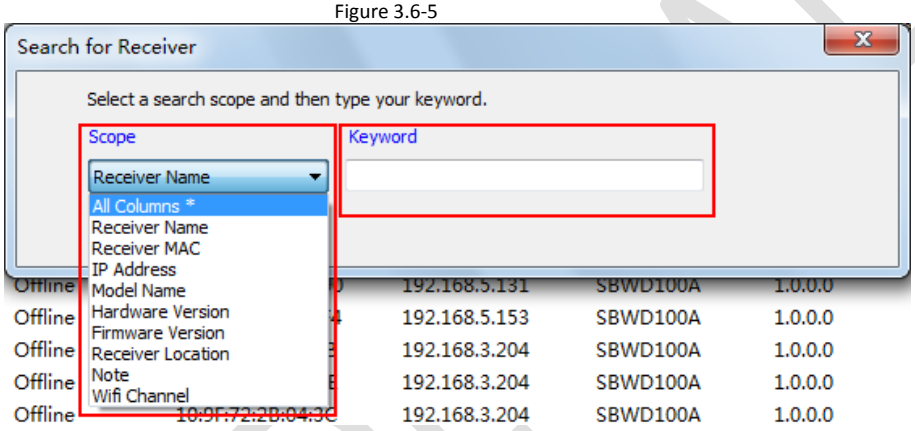
4. The **Search for Receiver** window appears. **Note**: You can also press the "**Ctrl** + **F**" keys to display this window.

Figure 3.6-4



5. On the **Search for Receiver** window, select a search scope in the **Scope** drop-down box, and then type a keyword in the **Keyword** box. **Note**: The keyword is case sensitive and only one keyword is allowed.

Figure 3.6-5



Note: You can not search in the Receiver Status and Receiver Feedback columns.

6. The CMS will filter receivers in the **Receiver** pane according to the keyword you have defined.

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Section 4

Group Management

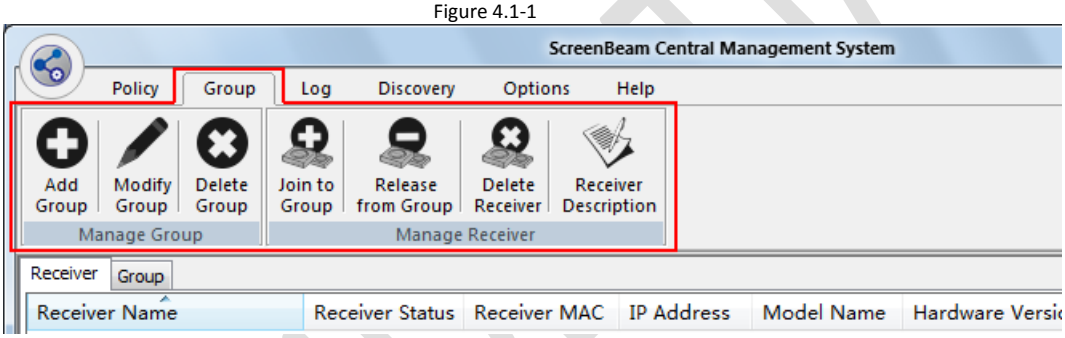
The ScreenBeam Central Management System allows you to group any number of ScreenBeam Receivers into groups for better organization and simplified batch management. Group Management allows you to create multiple top level groups, and also multiple sub-groups within higher level groups.

4.1 Create a Group

This section will guide you in creating your initial group, and then adding sub-level groups.

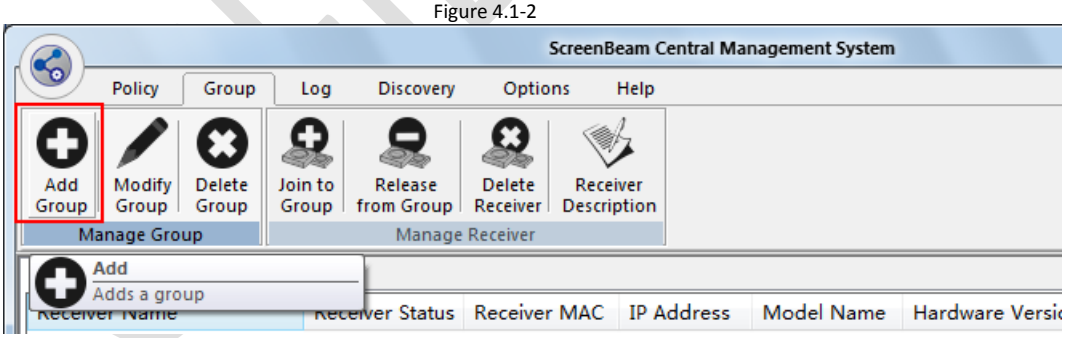
1. Launch the CMS software and go to the **Group** tab.

Figure 4.1-1



2. Click the **Add Group** button. The **Manage Group – Add Group** window will appear.

Figure 4.1-2



3. Select **(Root Group)** on the right pane, then enter a **Group Name** for your new group.

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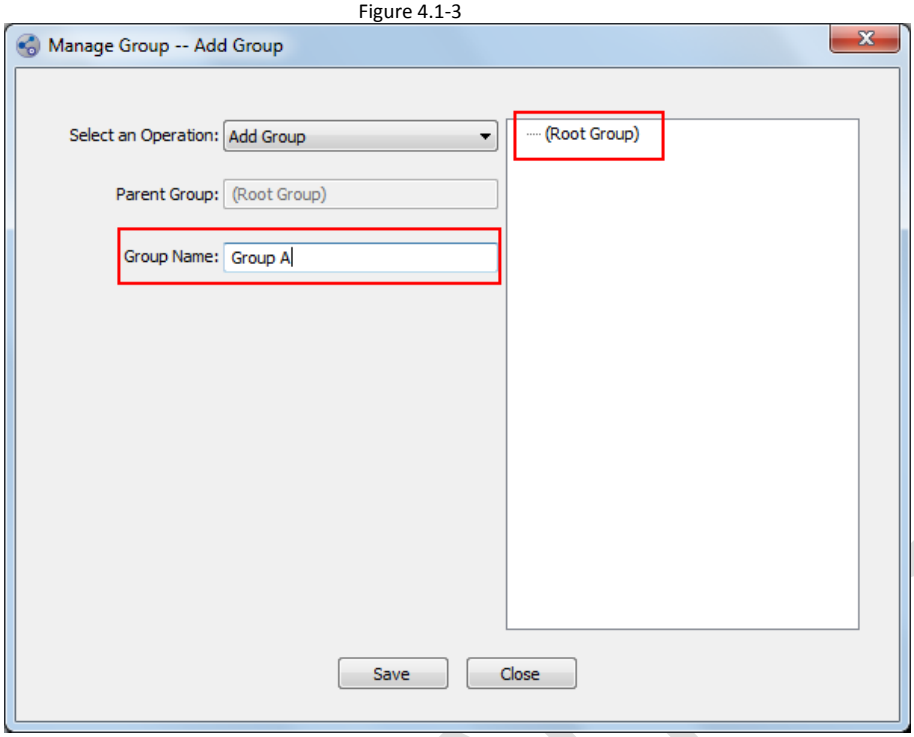
Figure 4.1-3



4. Click **Save** to save the group. You will see the new group listed on the right pane (also in the Group Pane).

Figure 4.1-4

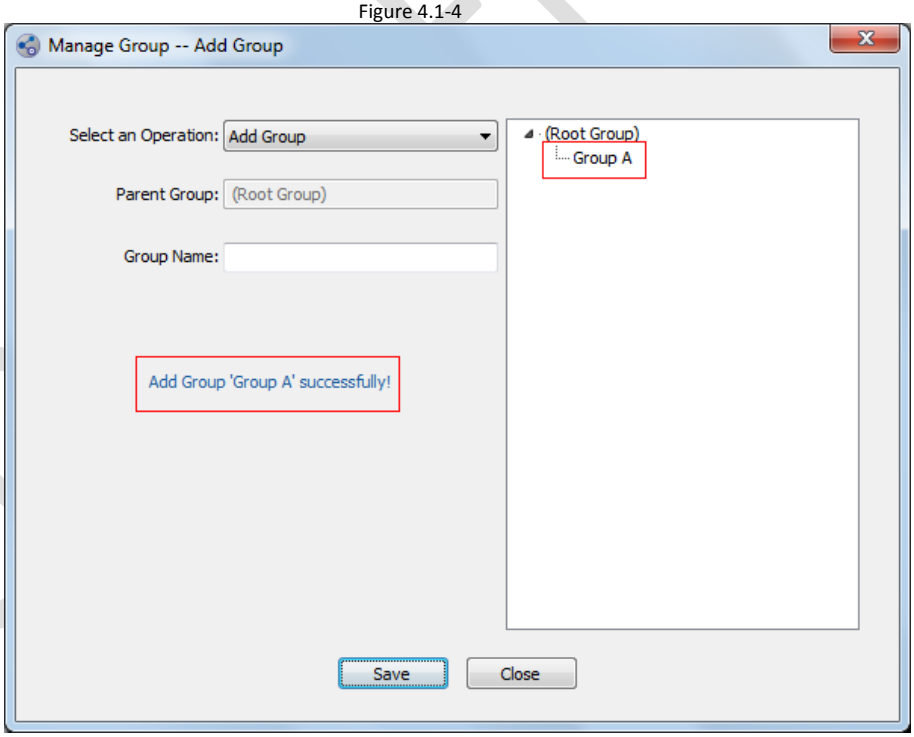
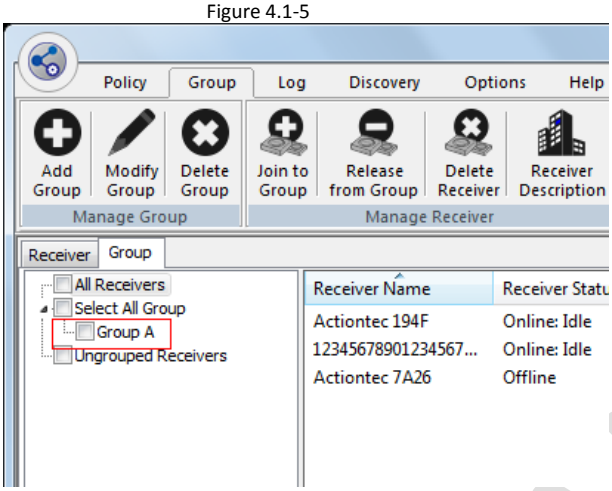
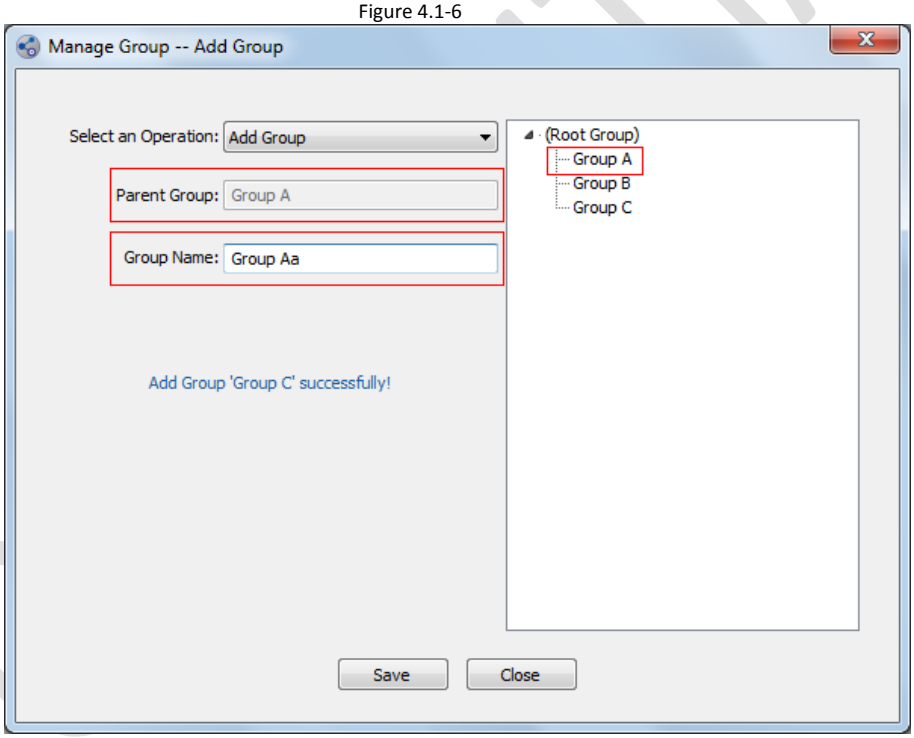


Figure 4.1-5



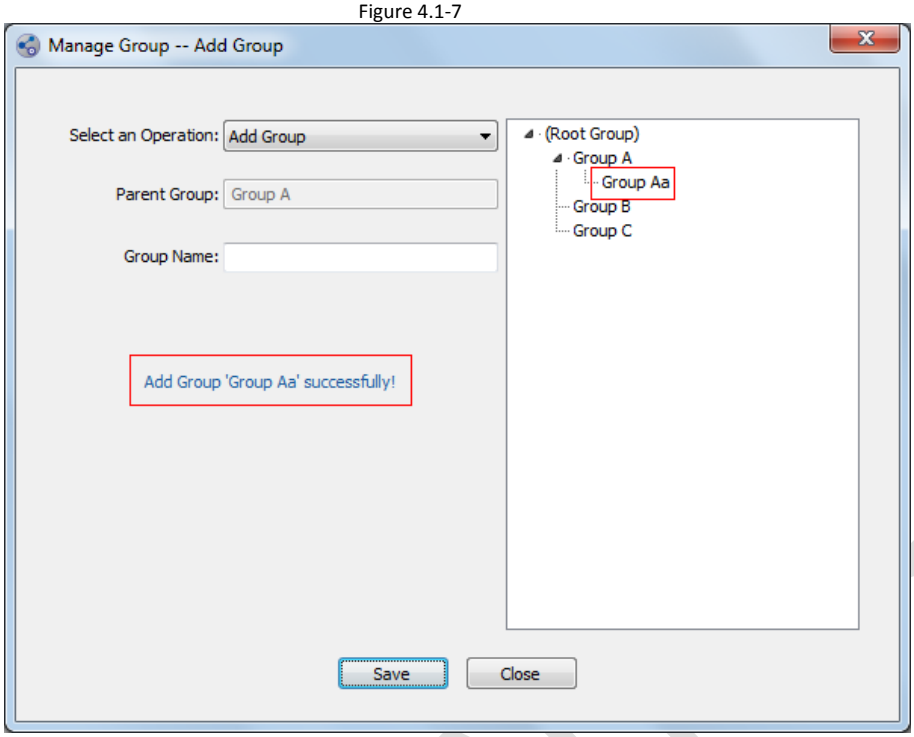
5. To create a sub-level group, return to the **Manage Group – Add Group** window.
6. On the right pane, select a group that you had previously created as your Parent Group. Enter a **Group Name** for this new group.

Figure 4.1-6



7. Click Save. You will see the new group listed below its parent group.

Figure 4.1-7

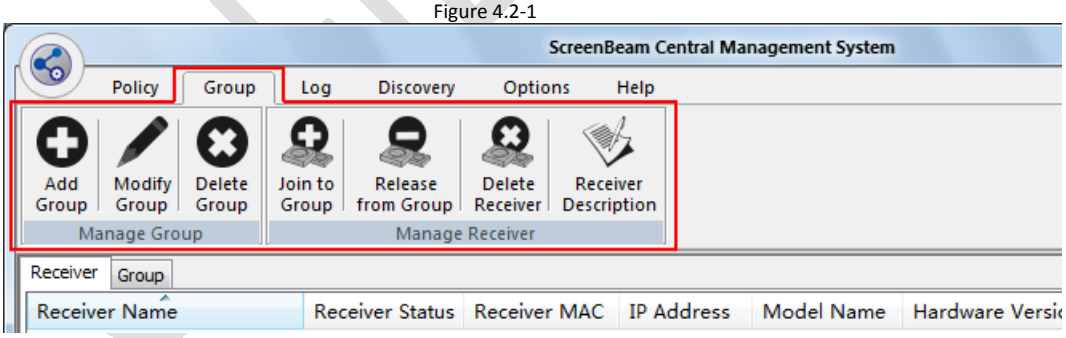


4.2 Add Receivers to a Group

Now that you've created your groups you can organize your receivers by adding them to specific groups.

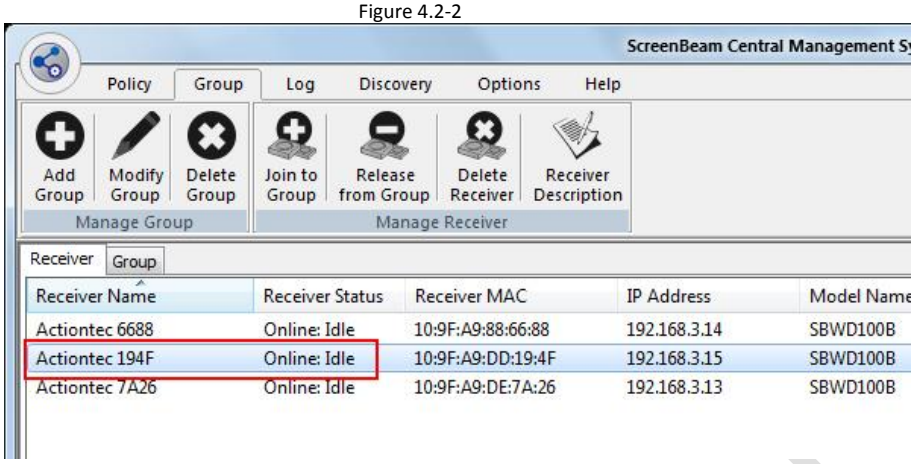
1. Launch the CMS software and go to the **Group** tab.

Figure 4.2-1



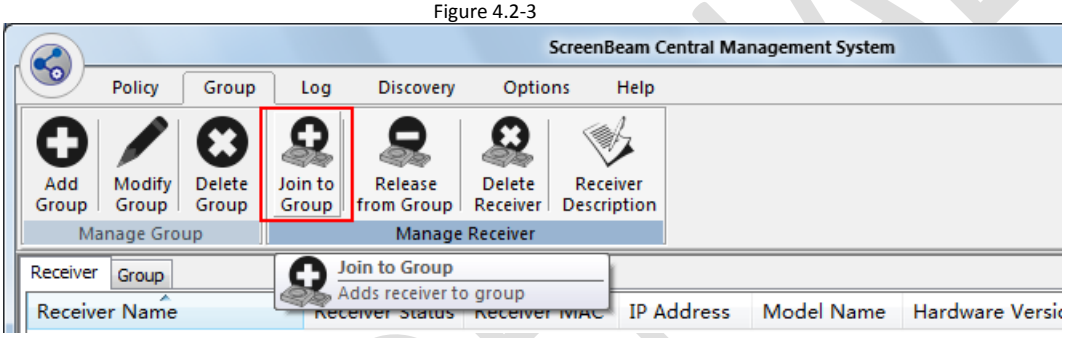
2. From the Receiver List, select the receivers that you would like to add to a group. The selected receivers are highlighted.

Figure 4.2-2



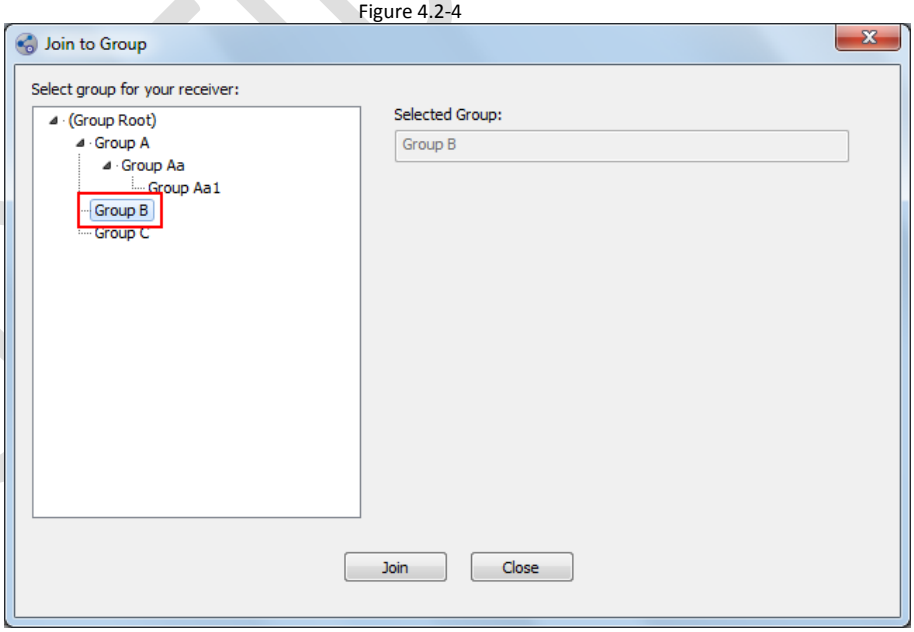
3. On the Action Bar, select **Join to Group**. This will open the **Join to Group** window.

Figure 4.2-3



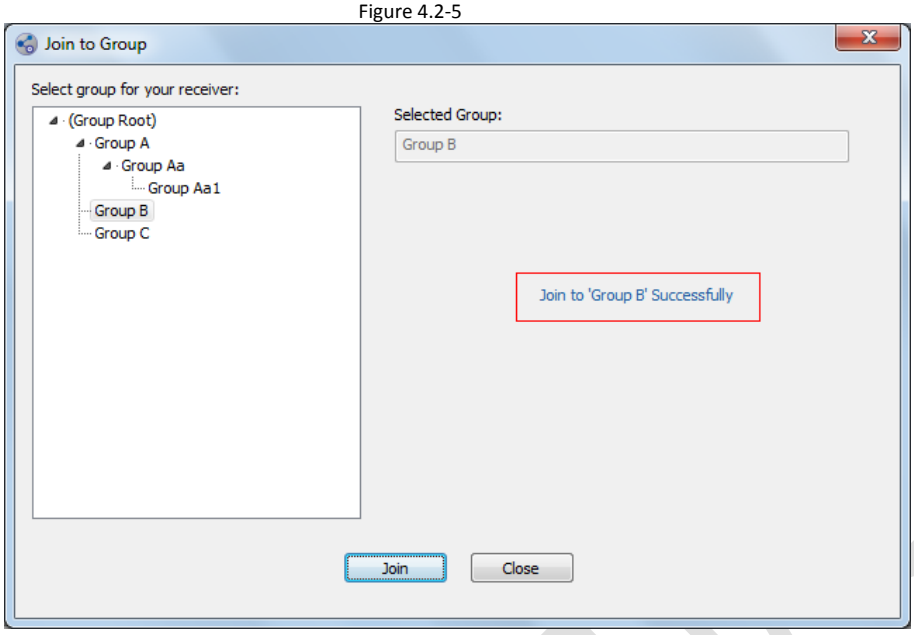
4. On the left pane select the group that you would like to assign for the selected receivers. Click the **Join** button to continue.

Figure 4.2-4



5. The receivers will now be in a group. You will see a success message on the screen.

Figure 4.2-5



Note: A receiver can join and belong to multiple groups.

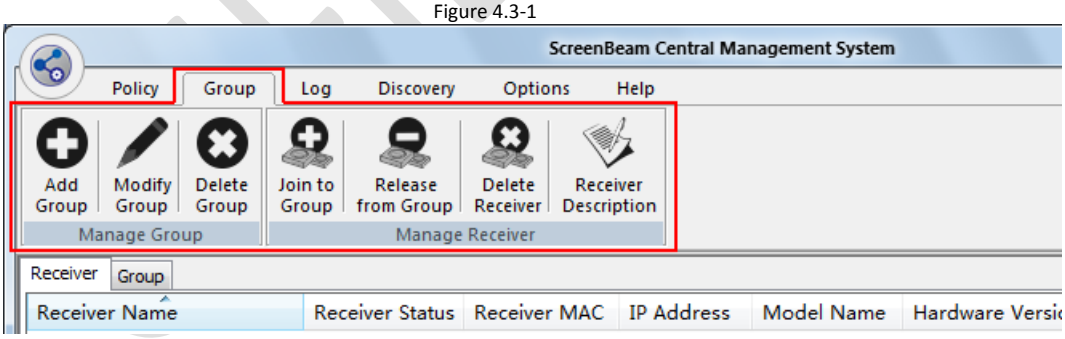
Note: In the Group Pane, selecting a parent group will also automatically select the child groups and its members.

4.3 Release Receivers from a Group

Follow the procedure below to release receivers from their respective groups.

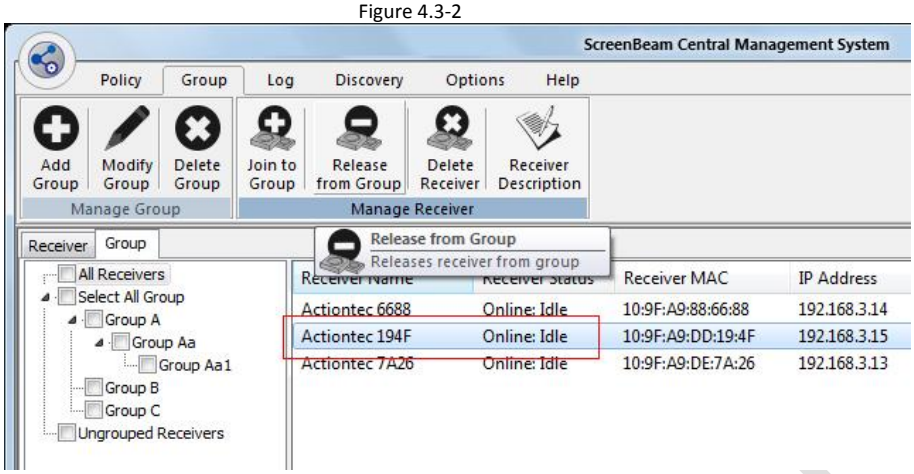
1. Launch the CMS software and go to the **Group** tab.

Figure 4.3-1



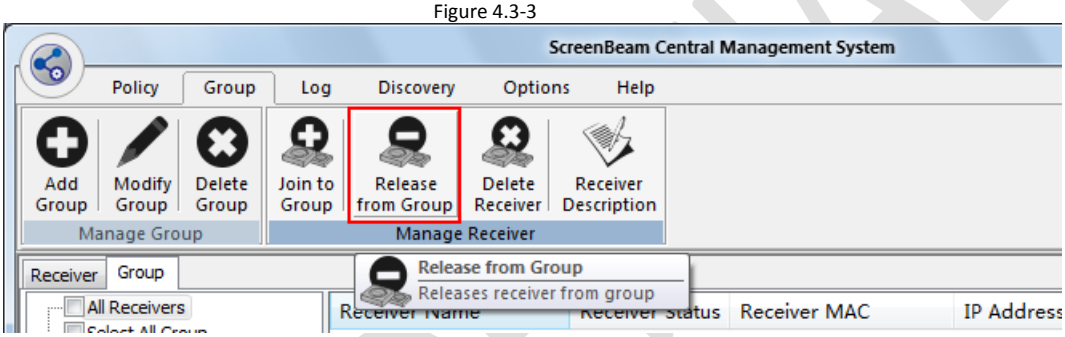
2. From the Receiver List, select the receivers you would like to release. You can also select all the receivers in a group by selecting the group in the Group Pane.

Figure 4.3-2



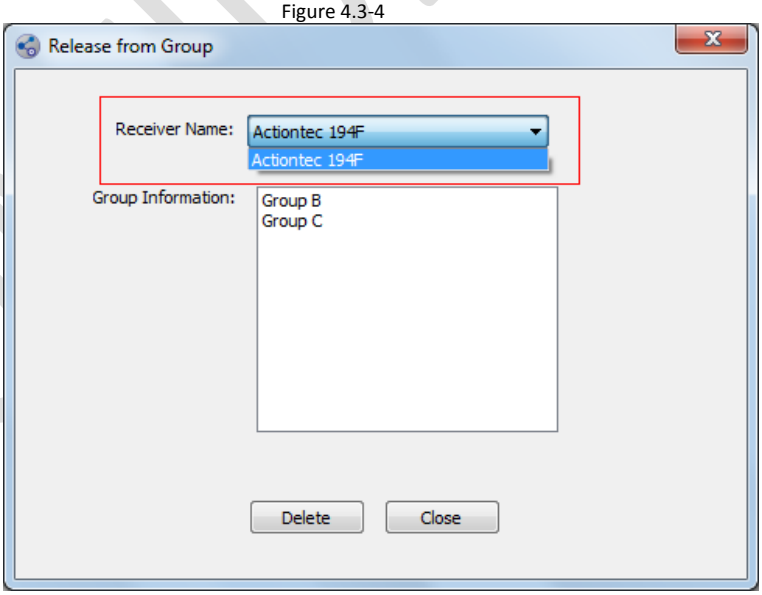
3. On the Action Bar select **Release from Group**.

Figure 4.3-3



4. The **Release from Group** window appears. Select a receiver from the **Receiver Name** drop down list.

Figure 4.3-4



5. The group(s) which the selected receiver belongs to appears in the **Group Information** pane. Click a group name to select it – click it again to de-select it.

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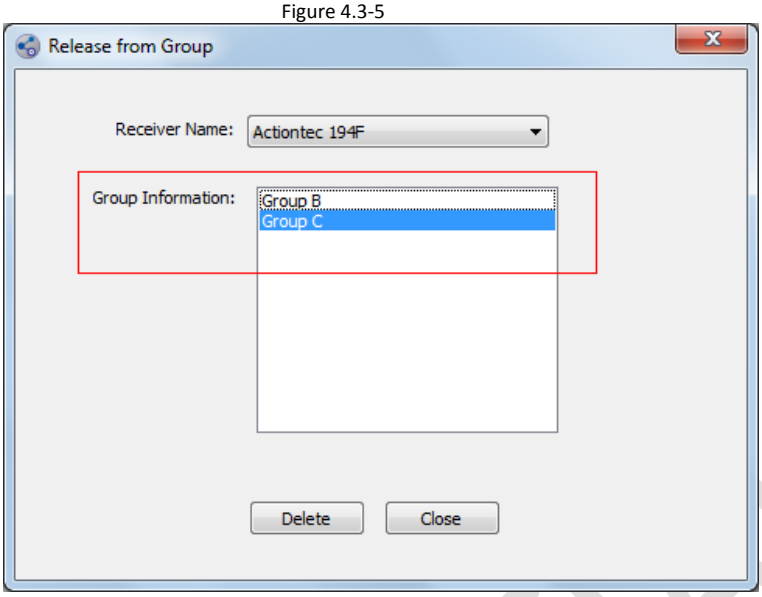
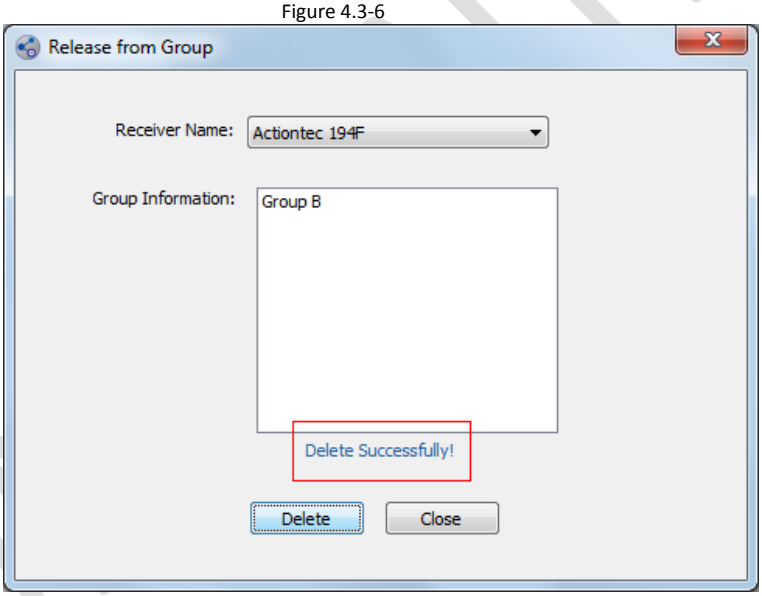
Figure 4.3-5



6. Click the **Delete** button to remove the receiver from the selected group. Repeat the process for other receivers.

Figure 4.3-6



4.4 Modify a Group

Follow the steps below to modify a group, particularly the group name.

1. Launch the CMS software and go to the **Group** tab.

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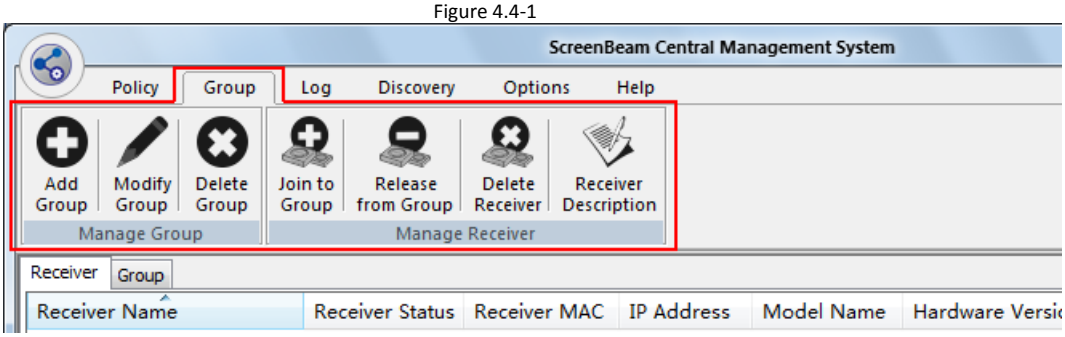
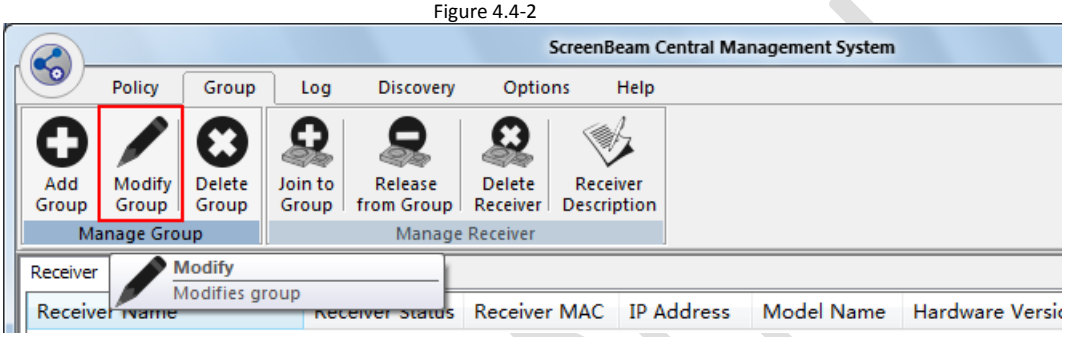
Figure 4.4-1



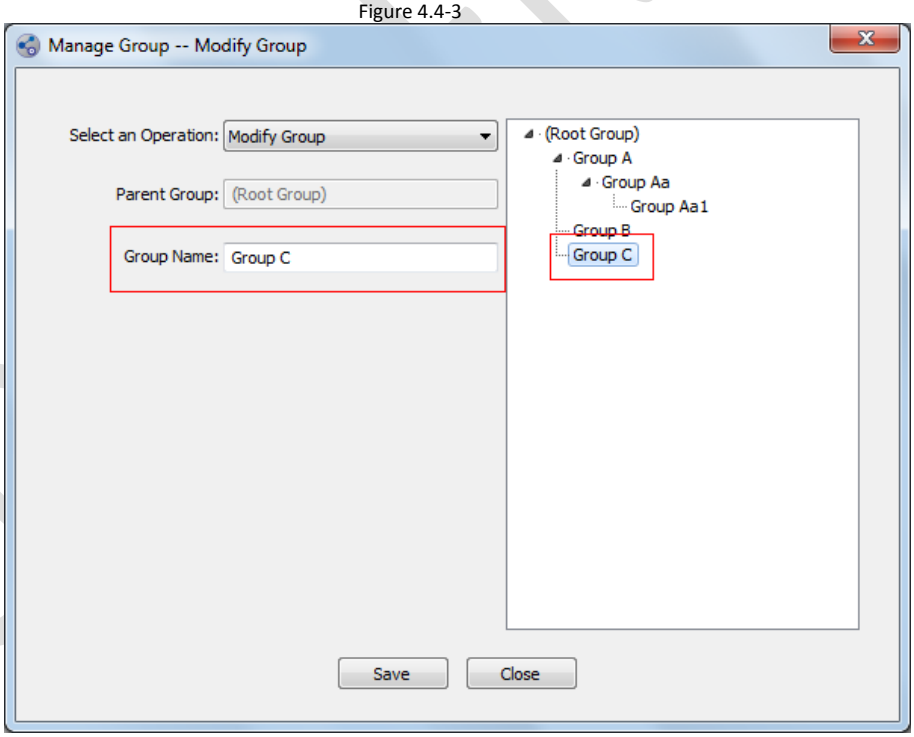
2. Click the **Modify Group** button. The **Manage Group – Modify Group** window appears.

Figure 4.4-2



3. Select a group from the right pane. Once selected you can modify the **Group Name** in the left pane.

Figure 4.4-3



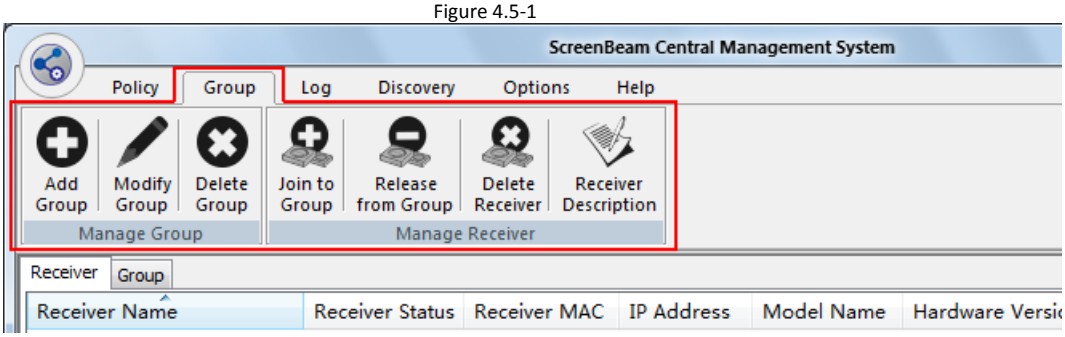
4. Click **Save** to make the change.

4.5 Delete a Group

This section will guide you in deleting your group.

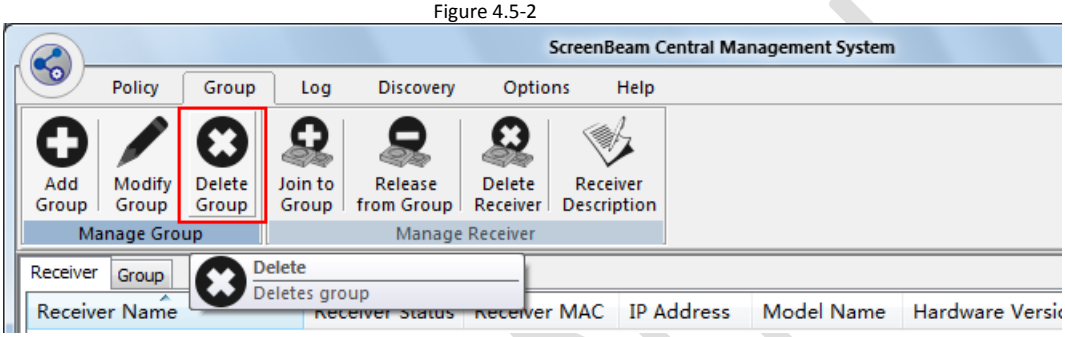
1. Launch the CMS software and go to the **Group** tab.

Figure 4.5-1



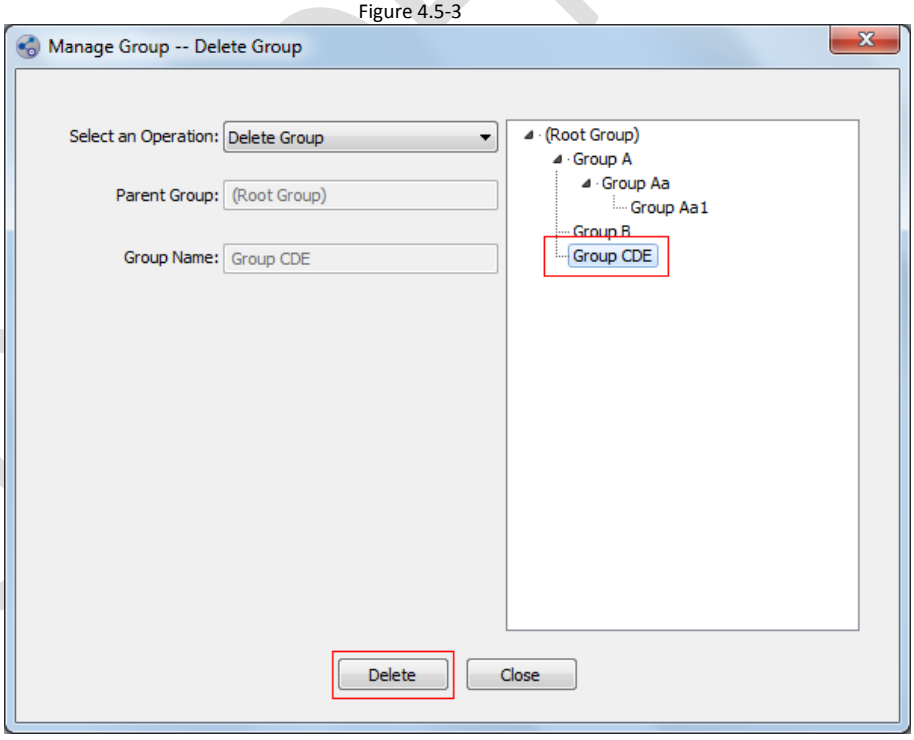
2. Select the **Delete Group** button.

Figure 4.5-2



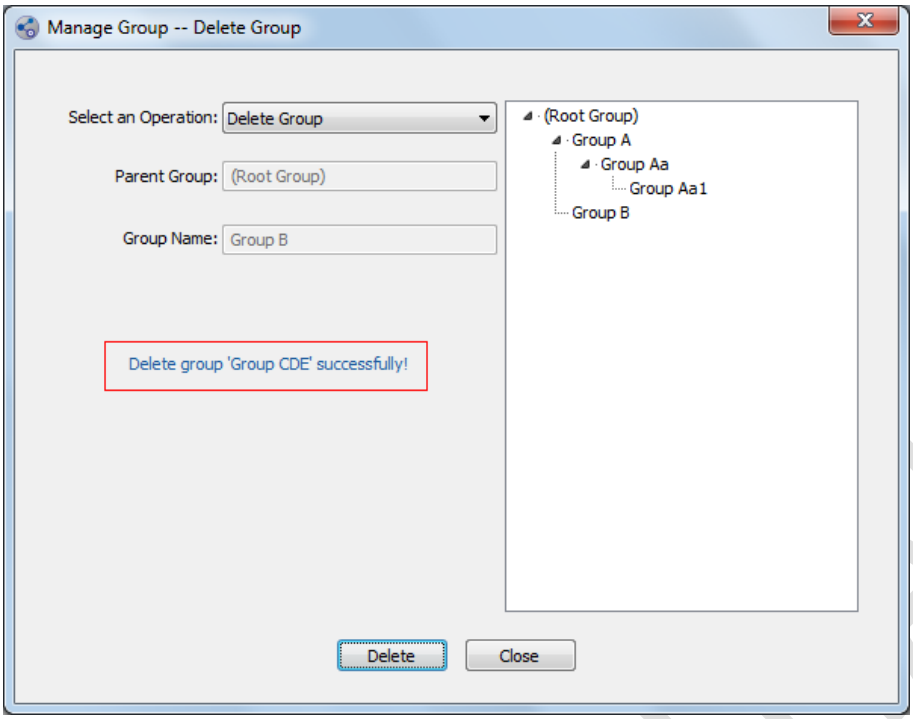
3. The **Manage Group – Delete Group** window appears. Select the group to be deleted from the right pane.

Figure 4.5-3



4. Click the **Delete** button to delete the selected group.

   Note: All child groups will be deleted if you delete their parent group.



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Section 5

Receiver Settings

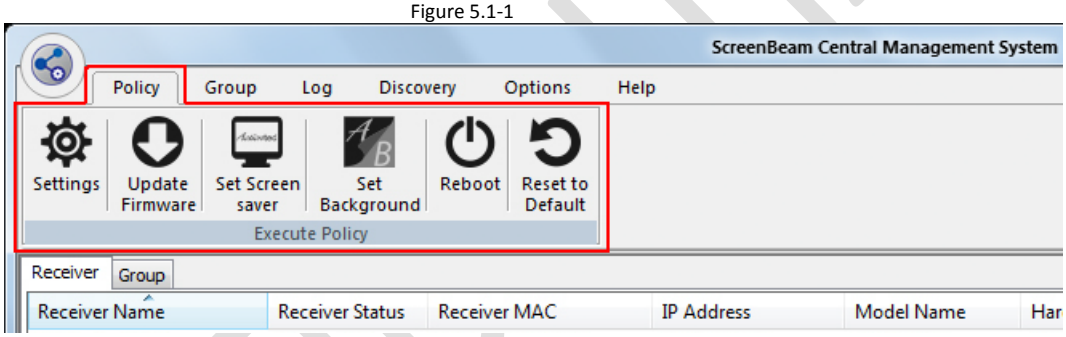
This section will guide you on making changes to the various settings on the ScreenBeam receivers. The ScreenBeam Central Management System allows you to make changes to a single receiver or to a batch of receivers.

5.1 Configure a Single Receiver

When configuring a single receiver you will be able to see all the current settings for the selected receiver, and also have the ability to make changes to any setting for that receiver.

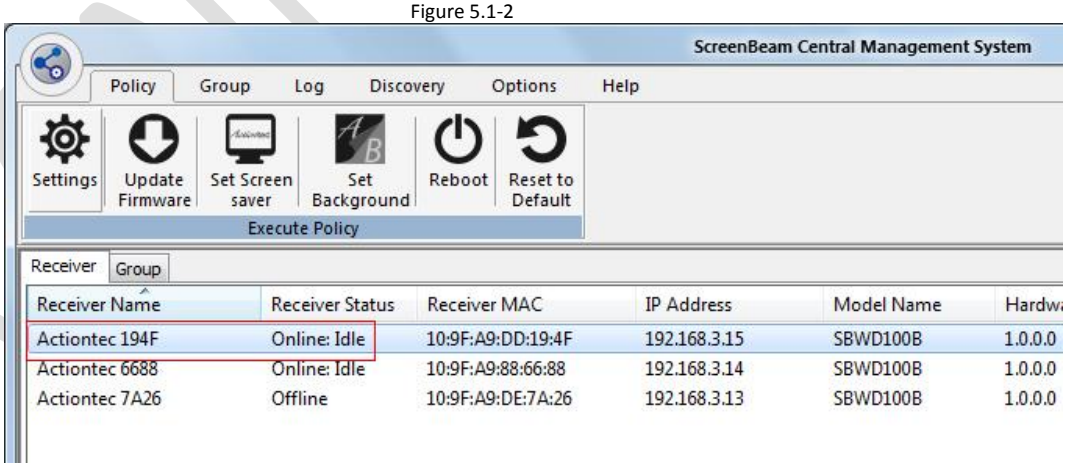
1. Launch the CMS software and go to the **Policy** tab.

Figure 5.1-1



2. On the Receiver List, select a single receiver by clicking the Receiver Name of the device you would like to configure.

Figure 5.1-2



3. Click the **Settings** button. The configuration window will appear.

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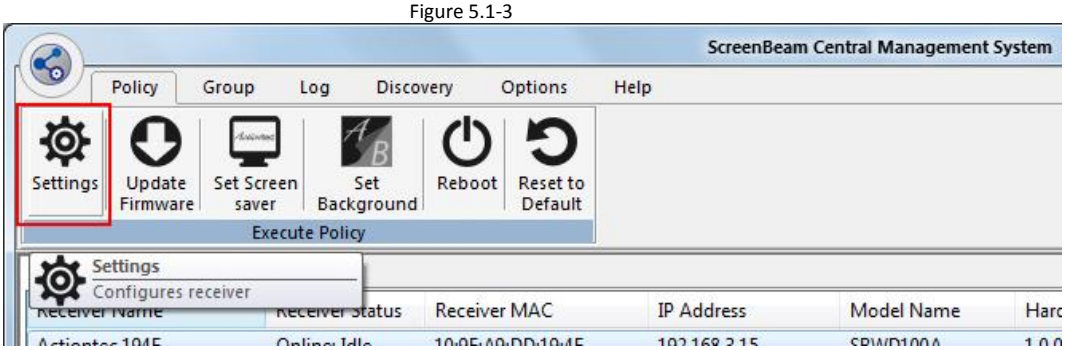
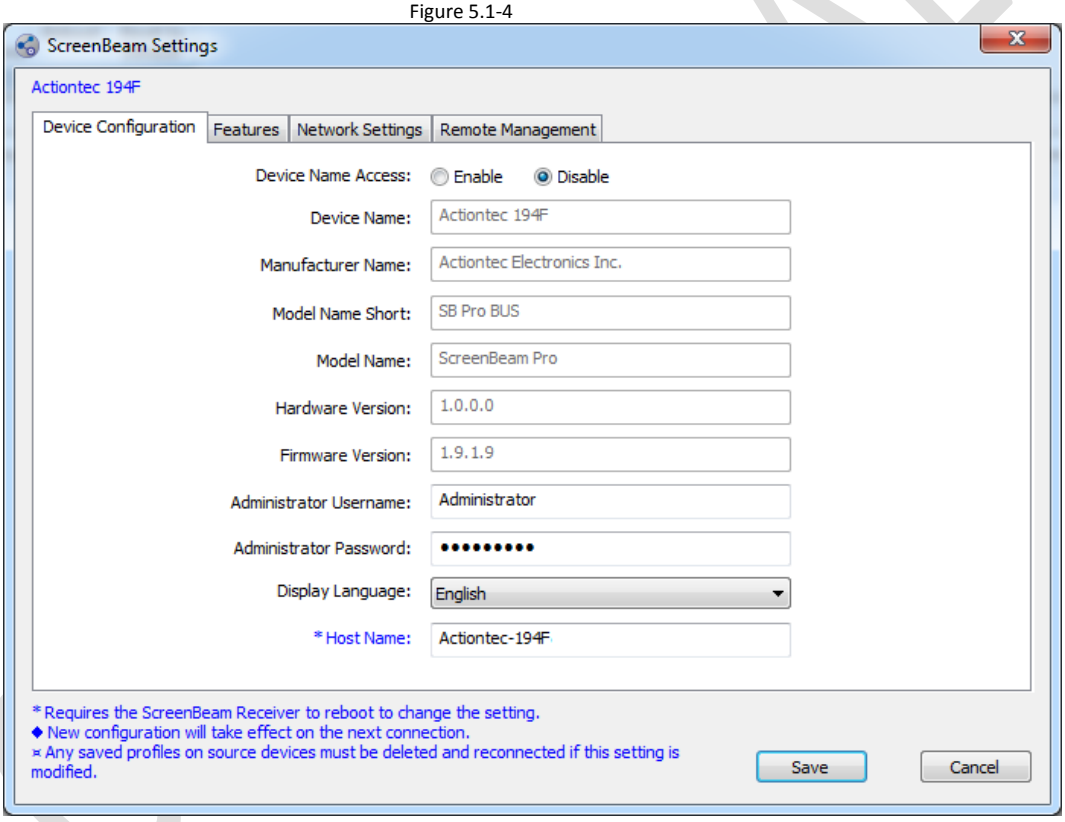
Figure 5.1-3



Note: You can also double-click a receiver on the Receiver Pane to open the configuration window.

4. Make necessary changes to the parameters and click **Save** to save your settings.

Figure 5.1-4



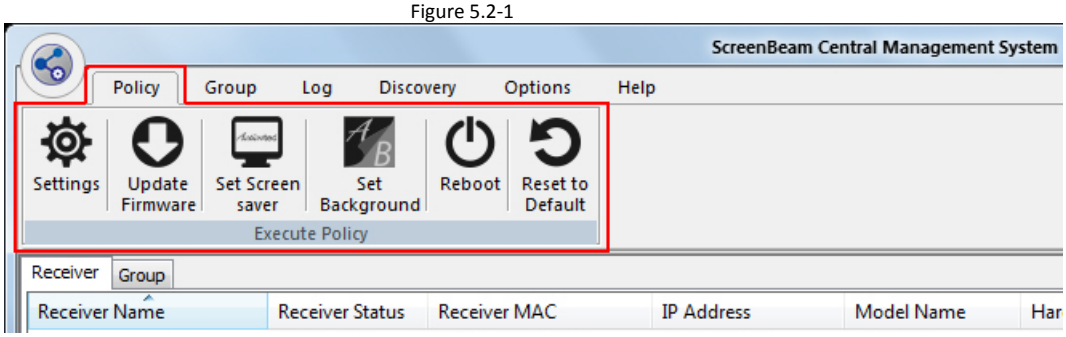
Note: You can also access the receiver's local management server and configure the receiver. For more detail, please refer to the receiver's user manual.

5.2 Configure Multiple Receivers

When configuring multiple receivers, you are given a select group of settings which can be configured in a batch. Once executed, the CMS server will send the configuration to all the receivers at once and the changes are made instantly.

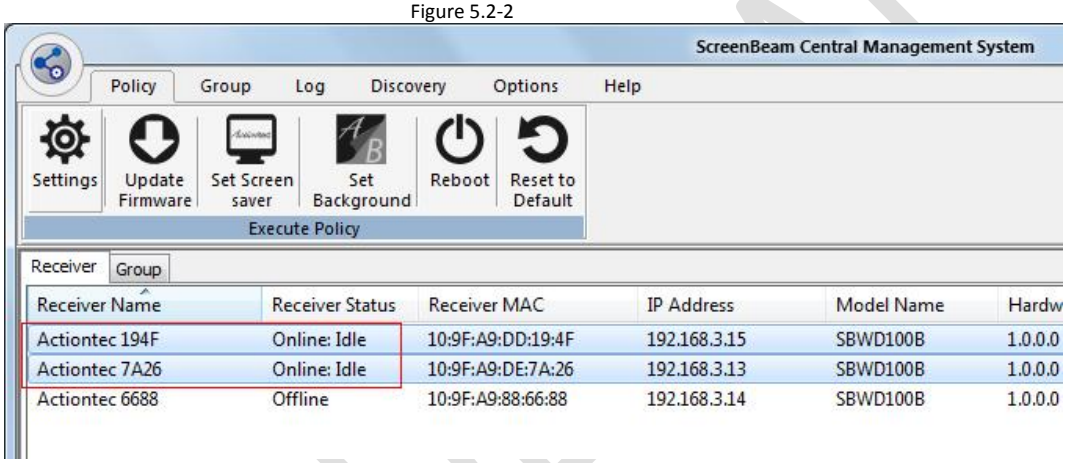
1. Launch the CMS software and go to the **Policy** tab.

Figure 5.2-1



2. On the Receiver List, select two or more receivers.

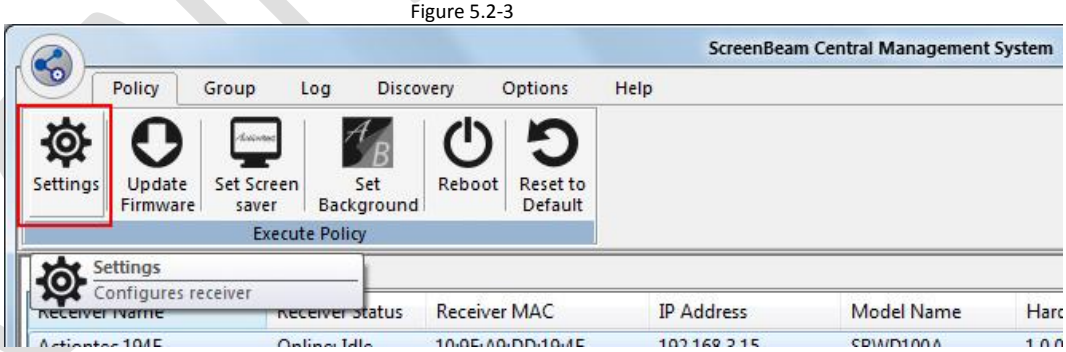
Figure 5.2-2



Note: You may also select multiple receivers by selecting one or more groups from the Group Pane.

3. Click the **Settings** button. The configuration window will appear.

Figure 5.2-3

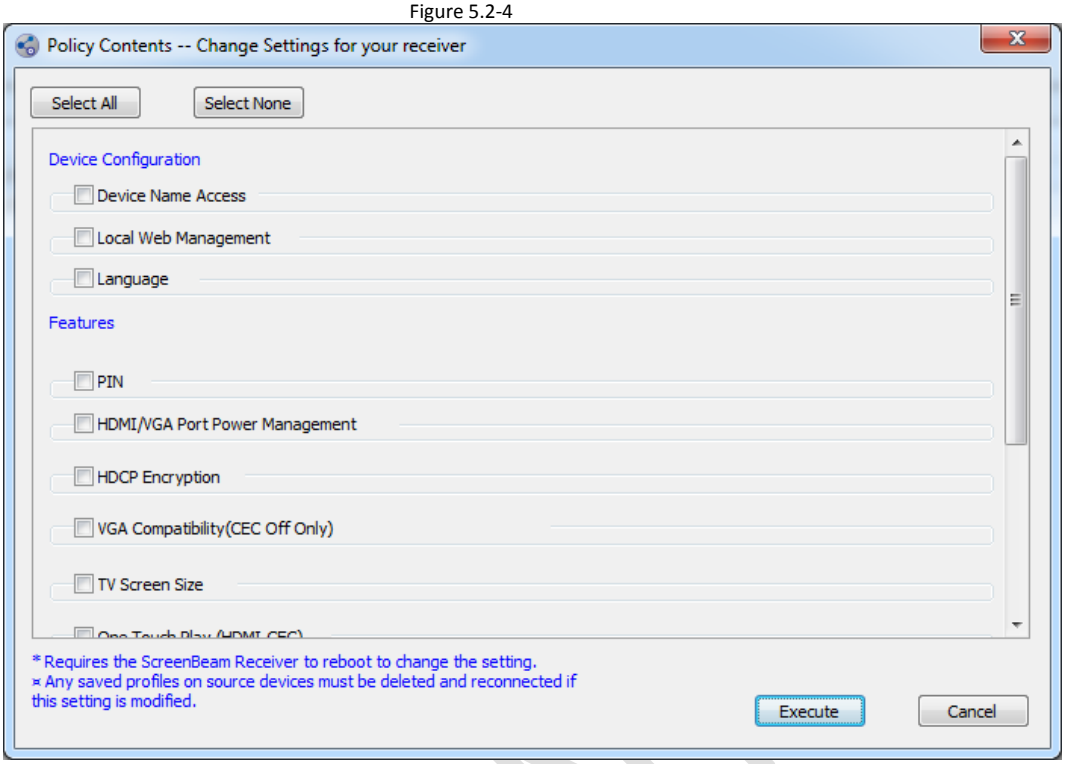


4. Select the items you want to configure (have the checkboxes checked), and make necessary changes to them. Click **Execute** to save your settings to the selected receivers.

- **Select All**: Click this button, all configuration items in this page will be selected.
- **Select None**: Click this button, all selected items will be deselected.

WARNING! Make sure all the settings, even those not modified, are correct. When batch configuring, all the settings previously configured on the receiver will be overwritten with those set on this page.

Figure 5.2-4



Note:

- Only the selected receivers will be configured. For further details on each configuration setting, please refer to the receiver's user manual.
- The features displayed in this page depend on the types of ScreenBeam receivers.

5. Click **Execute** to execute the policy for the selected receivers.
6. The **Change Settings for your receiver** window appears, which shows receiver setup status for the selected receivers.
   - **Selected:** It displays the total number of selected receivers.
   - **Offline:** It displays the number of offline receivers that are selected.
   - **Online:** It displays the number of online receivers that are selected.
   - **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
   - **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
   - **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
   - **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

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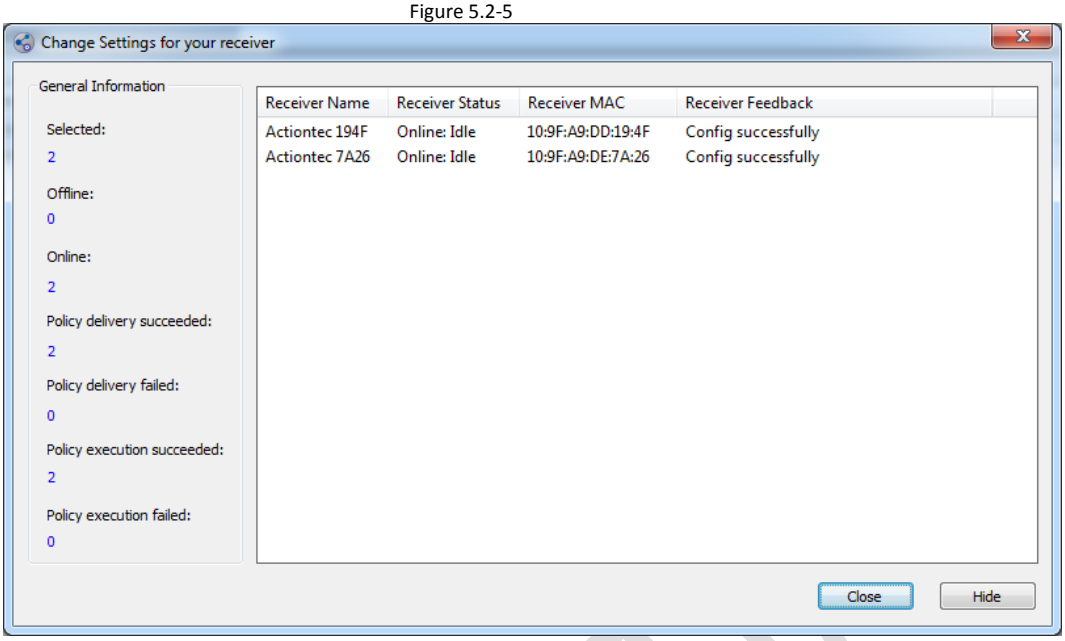
Figure 5.2-5



Note: The **Change Settings for your receiver** window will not appear if just one receiver is selected.

7. After the policy is executed, click the **Close** button to close the window.

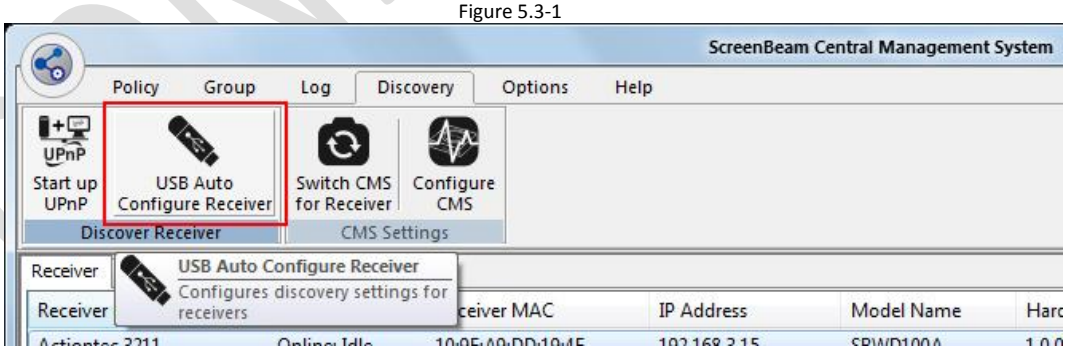
   Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

5.3 Configuring Receivers using a USB Flash Drive

You can also use a USB flash drive to configure ScreenBeam receivers. Follow the procedure below to configure a receiver using a USB flash drive:

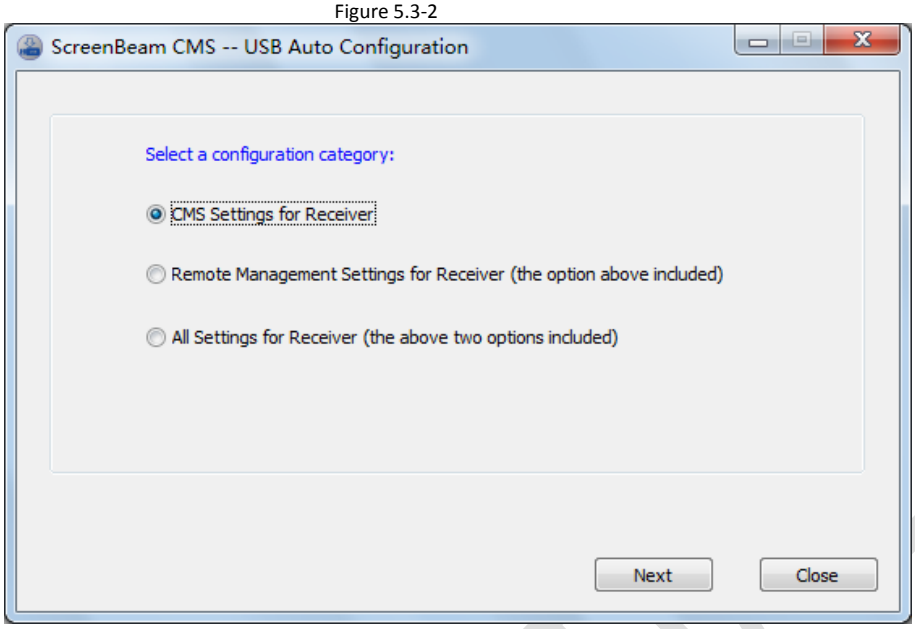
1. Connect a USB flash drive to a USB port on the CMS server.
2. Open the CMS software, go to the **Discovery** tab, and click the **USB Auto Configure Receiver** button.

Figure 5.3-1



3. The **ScreenBeam CMS – USB Auto Configuration** window appears.

Figure 5.3-2



4. Select one configuration category and click the **Next** button to continue.

   - **CMS Settings for Receiver**: Settings for CMS discovery are provided. Refer to **Section 3.4 Discover Receivers Using a USB Drive** for details.
   - **Remote Management Settings for Receiver**: CMS discovery settings, network interface settings, and Wi-Fi module connection settings are provided. For details about setting the network interface, refer to **Section 2.3 Configuring a Receiver's Network Interface**; and for details about setting the Wi-Fi module connection, refer to **Section 2.1.2 Wireless Connection**.
   - **All Settings for Receiver**: General settings for ScreenBeam receivers, except firmware update, screensaver image update, and standby background image update, are provided. Refer to the receiver's User Manual for details.

5.4 Setting the Screen Saver Image

The ScreenBeam Receiver's screen saver can be customized to include your own picture or logo.

5.4.1 Screen Saver Image Requirements

The requirements for the screen saver image are as following:

- The image must be in a Portable Network Graphics (PNG) format.
- The recommended image dimensions are 300 x 60 pixels (width x height).
- The file size of the image must be less than 200 KB.
- The image must reside in a Web server accessible by the receivers.

5.4.2 Setting the Screensaver Image

Follow the procedure below to set the screensaver image for one or more receivers.

1. Launch the CMS software and go to the **Policy** tab.

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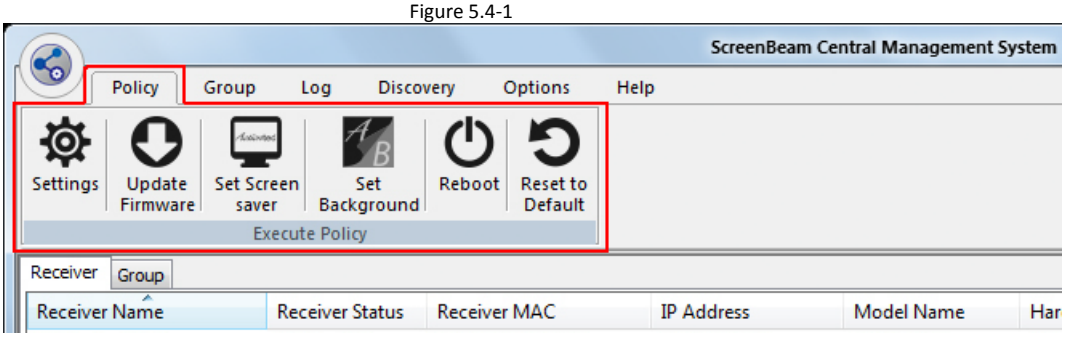
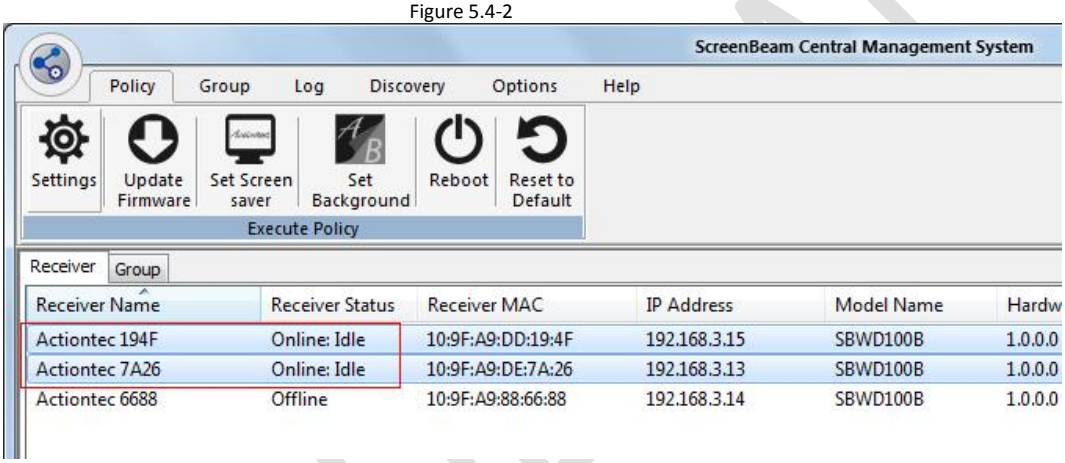
Figure 5.4-1



2. In the Receiver List, select one or more receivers.

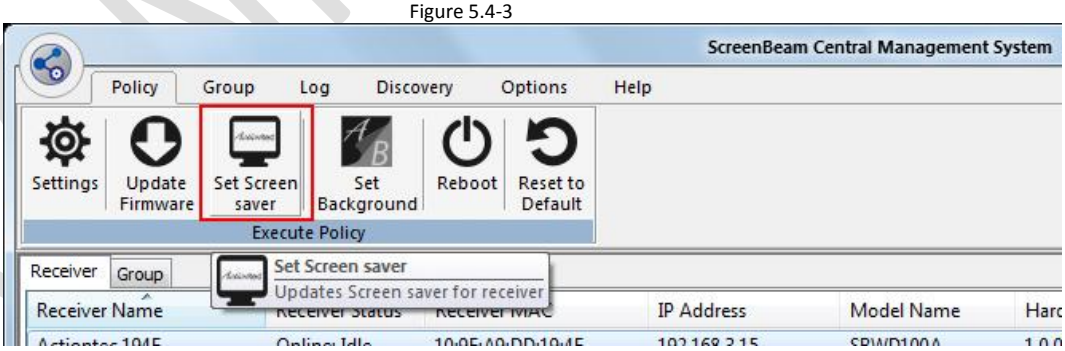
Figure 5.4-2



Note: You can also select multiple receivers by selecting one or more groups from the Group Pane.

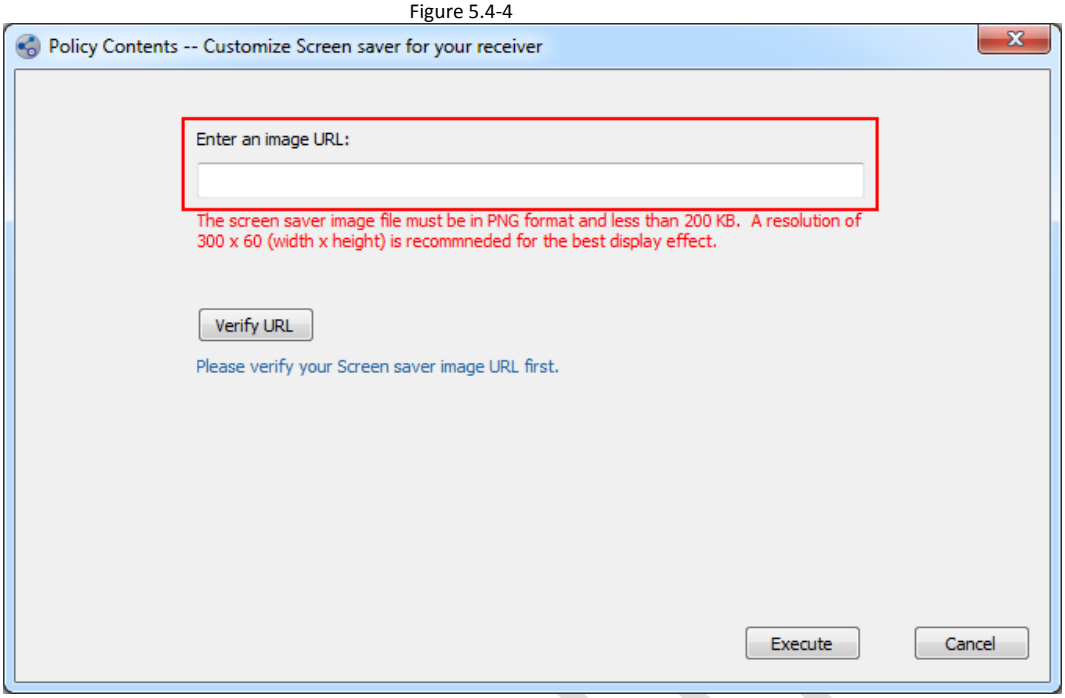
3. Click **Set Screen saver** from the Action Bar.

Figure 5.4-3



4. The **Policy Contents – Customize Screen Saver for your receiver** window appears. Enter the full URL address of the screensaver image file in the text box, e.g. "*http://192.168.5.60:8080/update/sceen.png*".

Figure 5.4-4



Note: You may optionally click on the Verify URL button to have the CMS server check if the URL is valid. This feature only works if the Web server and the CMS server are in the same local network.

5. Click **Execute** to update the screen saver image for the selected receivers.
6. The **Customize Screen saver for your receiver** window appears, which shows screen saver image update status for the selected receivers.
   - **Selected:** It displays the total number of selected receivers.
   - **Offline:** It displays the number of offline receivers that are selected.
   - **Online:** It displays the number of online receivers that are selected.
   - **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
   - **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
   - **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
   - **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

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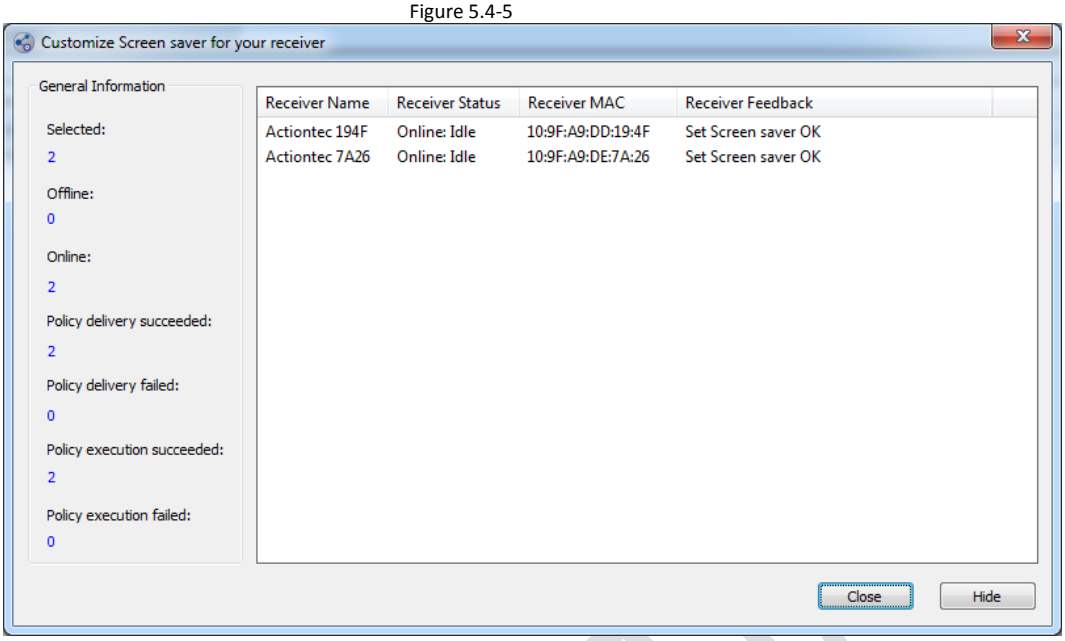
Figure 5.4-5



Note: The **Customize Screen saver for your receiver** window will not appear if just one receiver is selected.

7. After the policy is executed, click the **Close** button to close the window.

   Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

5.5 Setting a Background Image

The ScreenBeam Receiver's Background (the **Ready To Connect** screen) can be customized to include your own picture or logo.

5.5.1 Background Image Requirements

The requirements for the background image are as following:

- The image must be in .png and .jpeg/.jpg formats.
- The file size must not exceed 2.5 MB.
- The best image size is 1280*720 pixels (width x height).
- The image must reside in a Web server accessible by the receivers.

5.5.2 Setting a Background Image

Follow the procedure below to set the background image for one or more receivers.

1. Launch the CMS software and go to the **Policy** tab.

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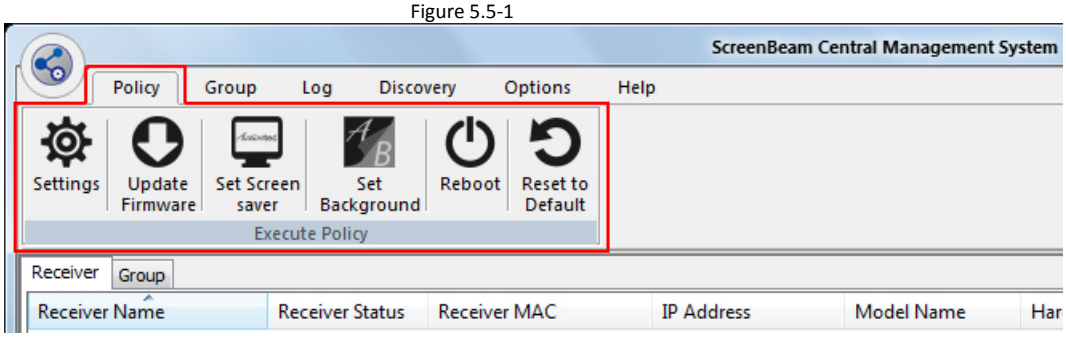
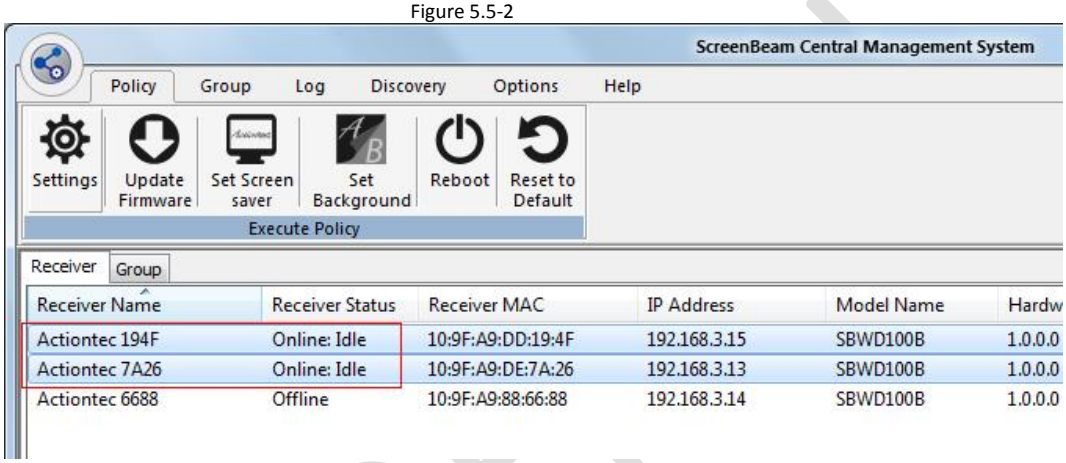
Figure 5.5-1



2. In the Receiver List, select one or more receivers.

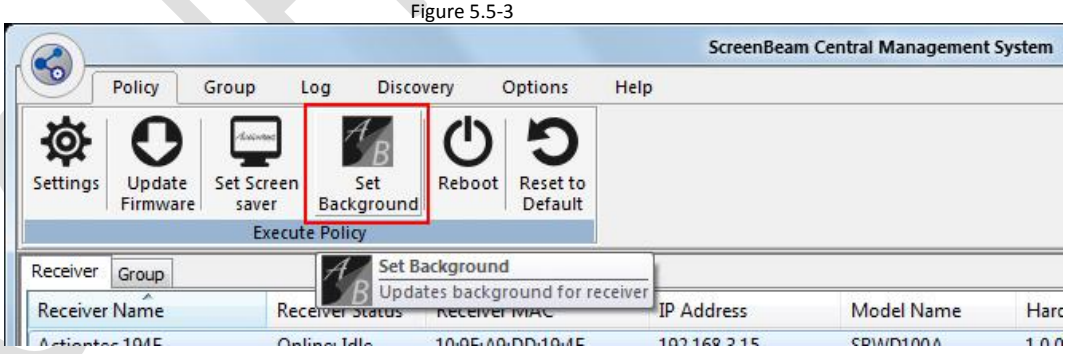
Figure 5.5-2



Note: You can also select multiple receivers by selecting one or more groups from the Group Pane.

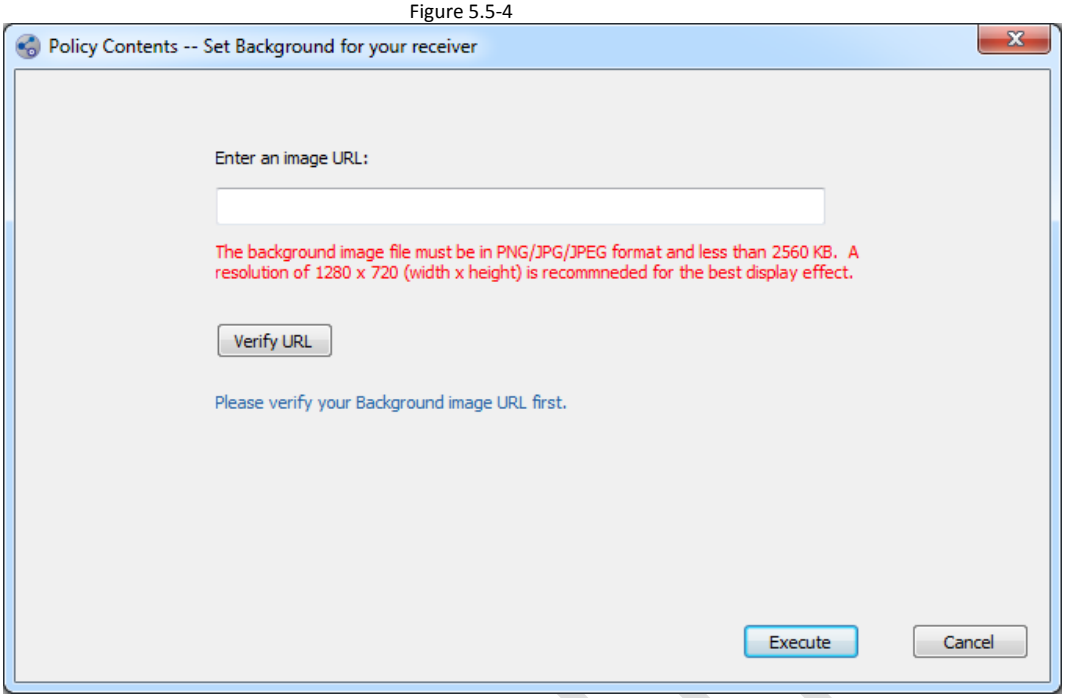
3. Click **Set Background** from the Action Bar.

Figure 5.5-3



4. The **Policy Contents – Set Background for your receiver** window appears. Enter the full URL address of the background image file in the text box, e.g. "*http://192.168.5.60:8080/update/background.png*".

Figure 5.5-4



Note: You may optionally click on the Verify URL button to have the CMS server check if the URL is valid. This feature only works if the Web server and the CMS server are in the same local network.

5. Click **Execute** to update the background image for the selected receivers.
6. The **Set Background for your receiver** window appears, which shows background update status for the selected receivers.
   - **Selected:** It displays the total number of selected receivers.
   - **Offline:** It displays the number of offline receivers that are selected.
   - **Online:** It displays the number of online receivers that are selected.
   - **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
   - **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
   - **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
   - **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

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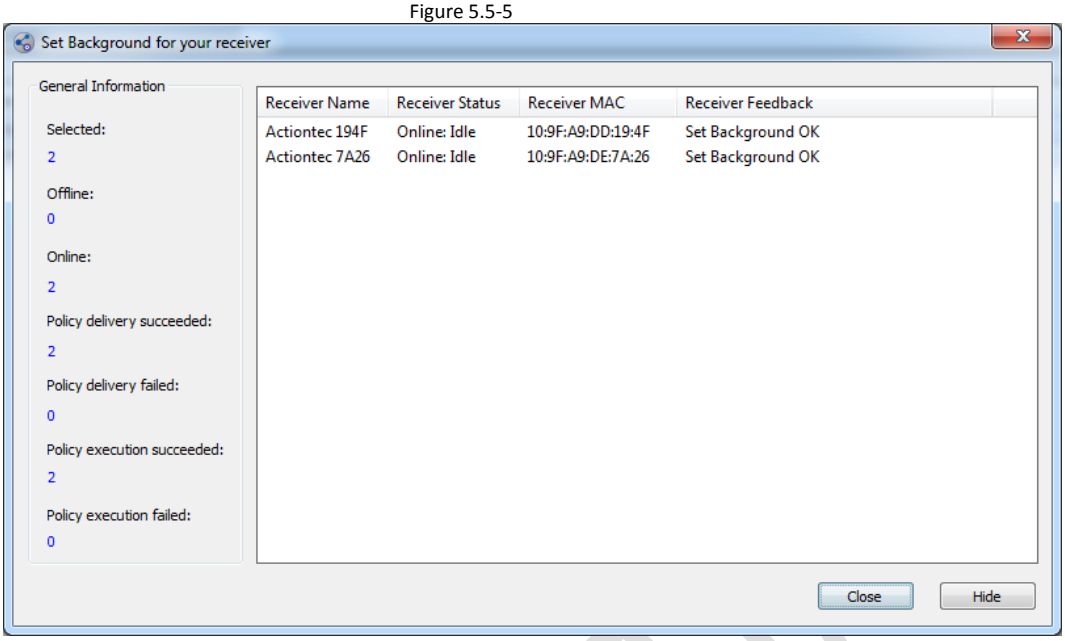
Figure 5.5-5



Note: The **Set Background for your receiver** window will not appear if just one receiver is selected.

7. After the policy is executed, click the **Close** button to close the window.

   Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

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Section 6

Updating Receiver Firmware

The ScreenBeam Central Management System allows you to upgrade the firmware for multiple receivers from a single location. This feature requires you to host the firmware image file on a web server, as we will describe below. Once hosted, each receiver will download the image and perform the update without requiring any user interaction.

6.1 Firmware Update Server

An HTTP server is required for performing firmware updates. This can be any HTTP server that is accessible by the network that your ScreenBeam receivers are connected to. The firmware image files, and also the screensaver/background image files, will reside in this server. Below are some notes regarding setting up your HTTP server:

1. If you are setting up your own HTTP server, we suggest using a fixed IP address. This IP will be required for entering into the URL if the receivers are not connected to a DNS server.
2. Copy the firmware image file to a folder in your server. DO NOT rename the firmware image files. They should remain named **install.img**.

   Note: The firmware file is in the ".img" format. You must enable support for the ".img" on your web server.

   Note: If you would like to maintain multiple firmware image files, we suggest putting them into separate folders.
3. If the server resides behind a firewall, make sure to forward all the necessary ports required to get HTTP access to the server.

   Note: You may setup the HTTP server on the same system running the CMS software. However, you may still have to open ports on your firewall so that the ScreenBeam receivers can access both the CMS software and the HTTP files.

6.2 Update the Receiver Firmware

The following section will guide you to updating the firmware for one or more receivers. Updating can take up to 20 or more minutes, depending on network bandwidth. It is suggested to perform updates during off hours.

Note: Perform updates in smaller groups of receivers, so as not to saturate the network.

1. Launch the CMS software and go to the **Policy** tab.

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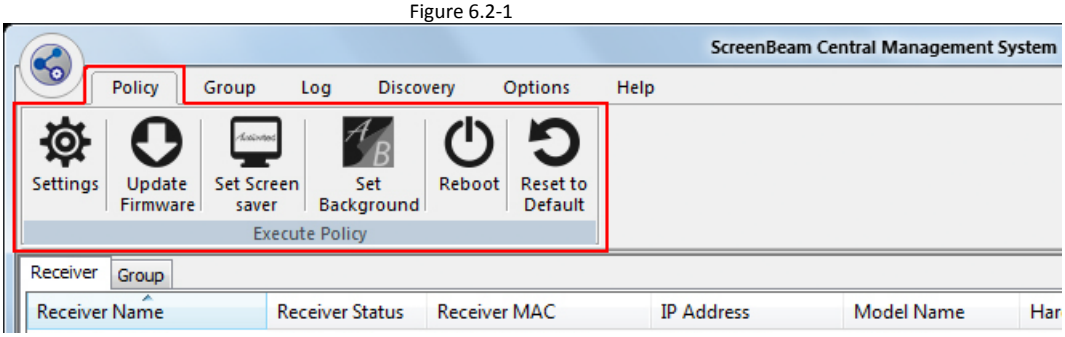
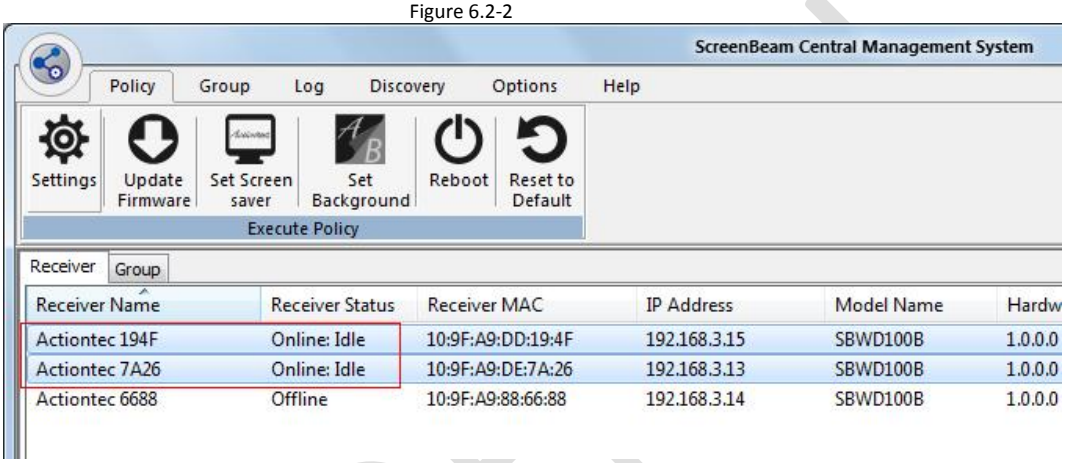
Figure 6.2-1



2. In the Receiver List, select one or more receivers.

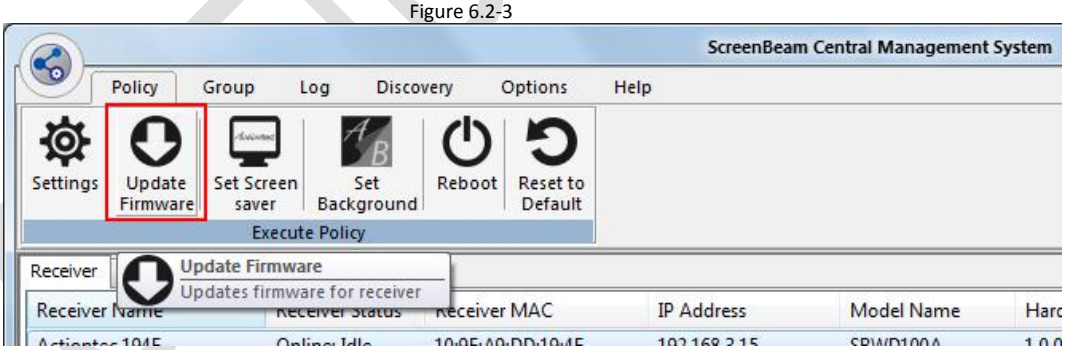
Figure 6.2-2



Note: You can also select receivers by selecting groups.

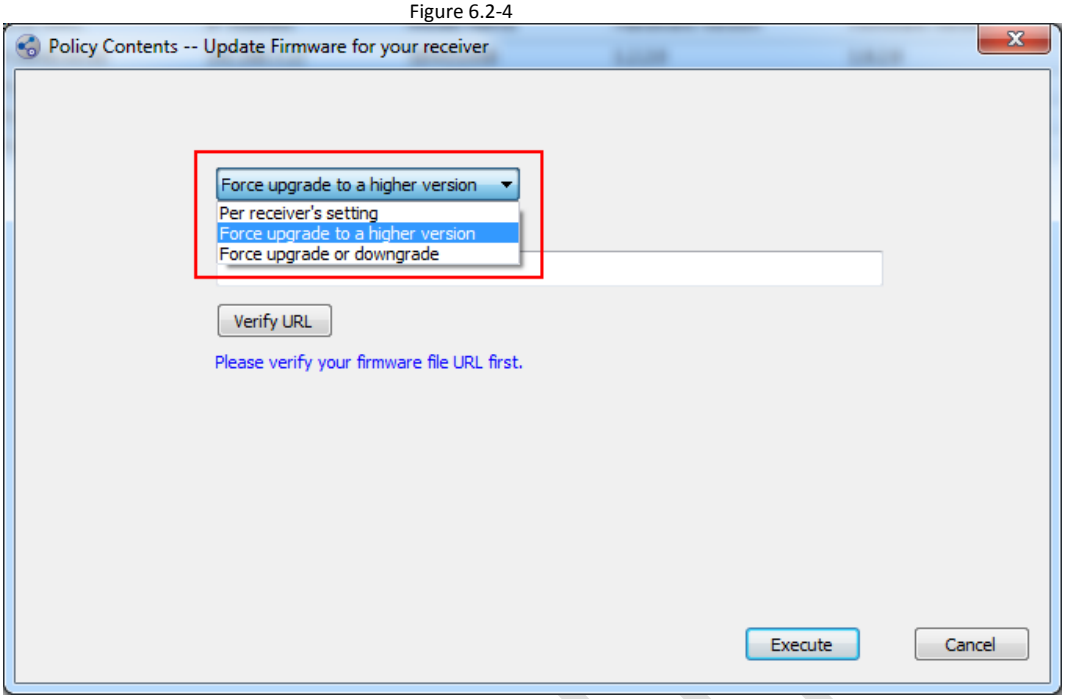
3. Click the **Update Firmware** button in the Action Bar.

Figure 6.2-3



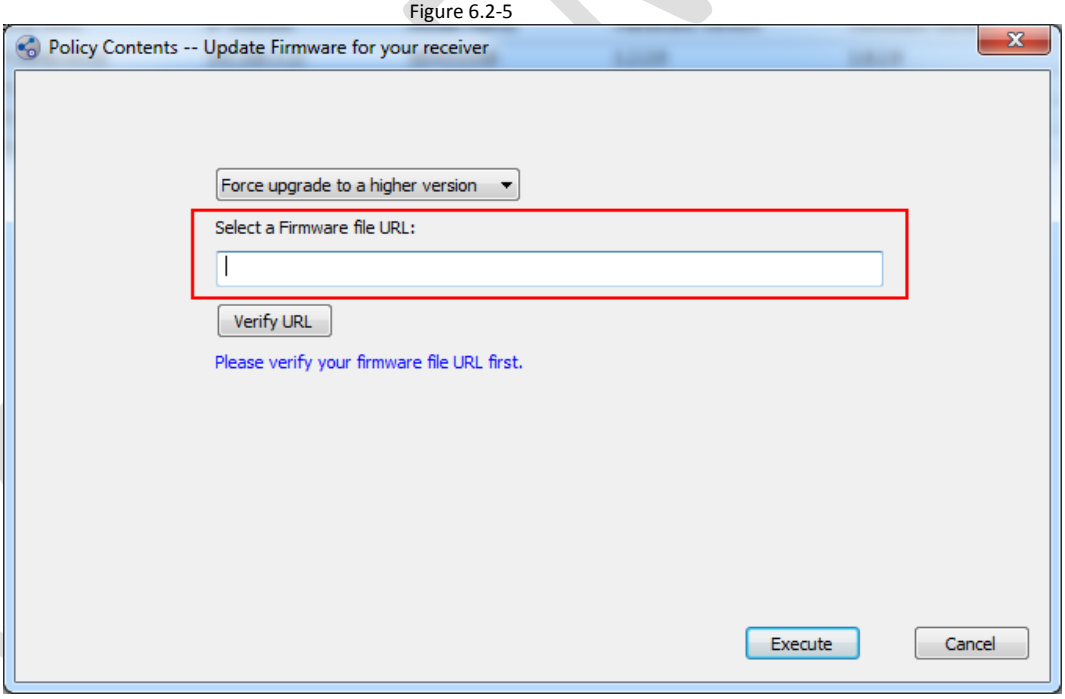
4. The **Policy Contents - Update Firmware for your receiver** window appears.
5. Select a firmware update option.
   - **Per receiver's setting**: The selected receivers will be upgraded to a higher version if firmware upgrade is enabled for the receiver. Otherwise, the receiver's firmware will not be updated.
   - **Force upgrade to a higher version**: The selected receivers will be upgraded to a higher version no matter firmware upgrade is enabled for the receiver or not.
   - **Force upgrade or downgrade**: The selected receivers will be upgraded to a higher version or downgraded to a lower version no matter firmware upgrade is enabled for the receiver or not.

Figure 6.2-4



6. Type the full URL address of the firmware image file in the URL field, e.g. "*http://192.168.5.60:8080/update/install.img*".

Figure 6.2-5



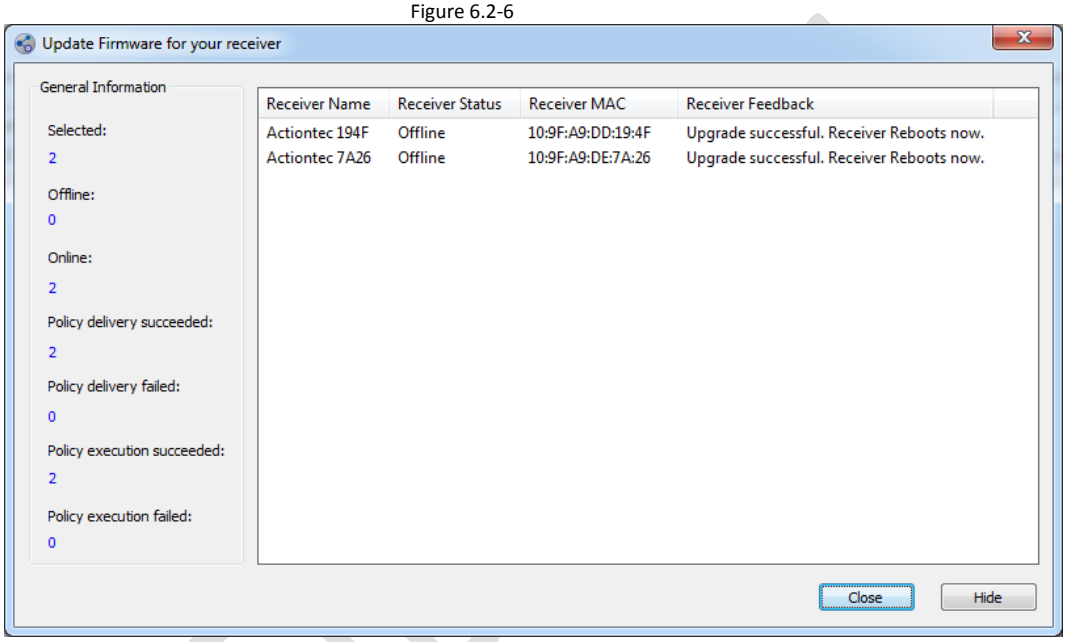
Note: You may optionally click on the **Verify URL** button to have the CMS server check if the URL is valid.

Note: You must enter an IP address here; even you deploy your web server locally. An URL address such as "http://localhost/update/install.img" will not work.

7. Click the **Execute** button to perform the update for the selected receivers.
8. The **Update Firmware for your receiver** window appears, which shows firmware update status for the selected receivers.

- **Selected:** It displays the total number of selected receivers.
- **Offline:** It displays the number of offline receivers that are selected.
- **Online:** It displays the number of online receivers that are selected.
- **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
- **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
- **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
- **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

Figure 6.2-6



Note: The **Update Firmware for your receiver** window will not appear if just one receiver is selected.

9. Firmware update status is also displayed on the display devices that the receivers connect to and the CMS server screen.
10. After the policy is executed, click the **Close** button to close the window.

    Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

Note: After a firmware upgrade the ScreenBeam Receiver should retain its settings.

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Section 7

Receiver Logs

ScreenBeam Wireless Display Receivers can record and transfer system logs for troubleshooting purposes. By default, receiver logs remain within the ScreenBeam Receiver. The ScreenBeam Central Management System allows you to configure receivers to upload these logs to an FTP server location or to the CMS server itself.

7.1 Enable Receiver Log Upload

In this section we will describe the type of events which are logged and then describe the procedure for uploading the logs.

7.1.1 Logged Events

The following are the events which are logged by the ScreenBeam Receiver:

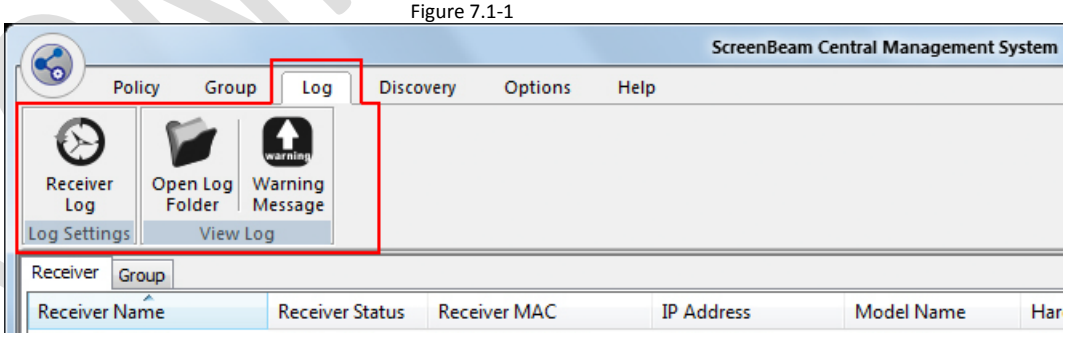
- Reboots
- Reset settings
- Firmware updates
- Connection initiated with a source device
- Successful connections
- Failed connections
- Disconnections from the source device

7.1.2 Enabling Receiver Logging

The procedure below describes how to enable receiver log uploads.

1. Launch the CMS software and go to the **Log** tab.

Figure 7.1-1



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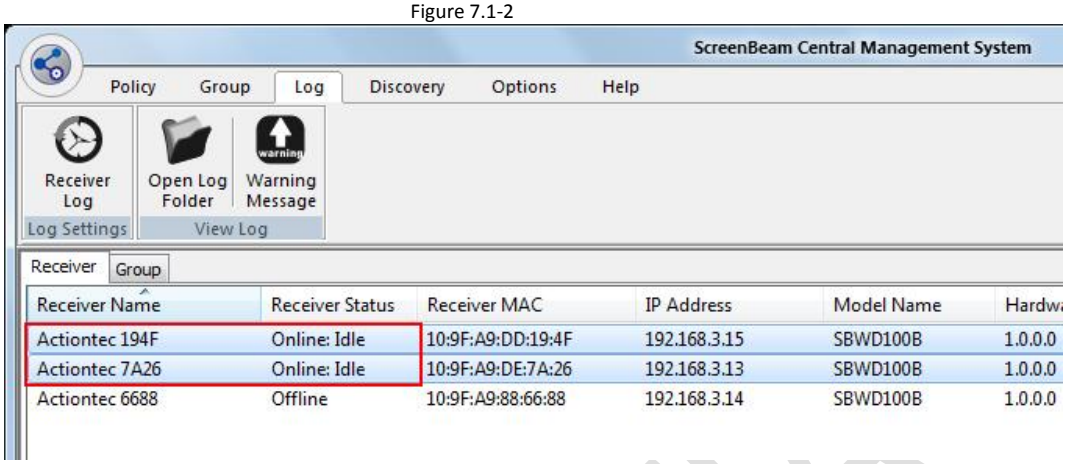
2. In the Receiver List, select one or more receivers.

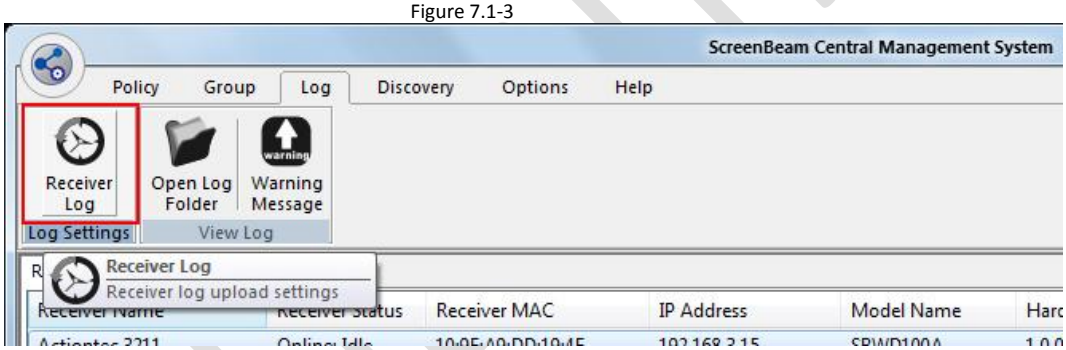
Figure 7.1-2



Note: You can also select receivers by groups (by checking the groups' check boxes).

3. Click **Receiver Log** on the Action Bar.

Figure 7.1-3



4. The **Policy Contents - Receiver Log** window appears. Set **Log Upload** to **Enable**.

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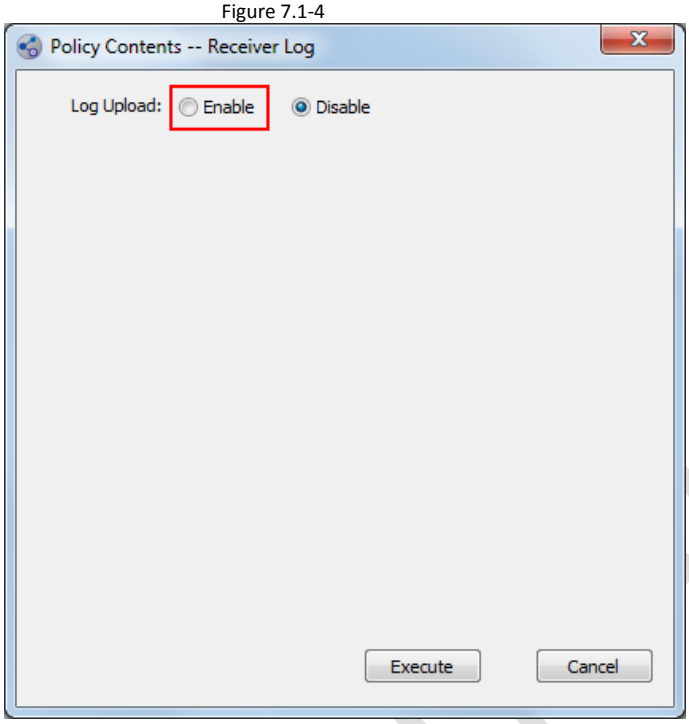
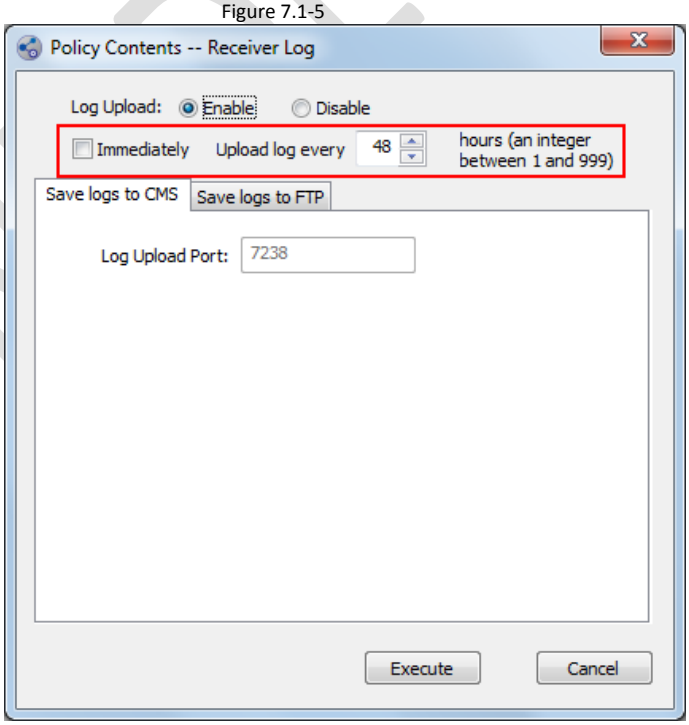
Figure 7.1-4



5. Define a log upload interval. By default, the upload interval is every 48 hours. You can define an interval in the 1 – 999 (hours) range.

Figure 7.1-5



Note: If **Immediately** is selected, receivers will upload logs to the selected server immediately after the log upload server is configured successfully.

6. Select where to save the receiver logs.

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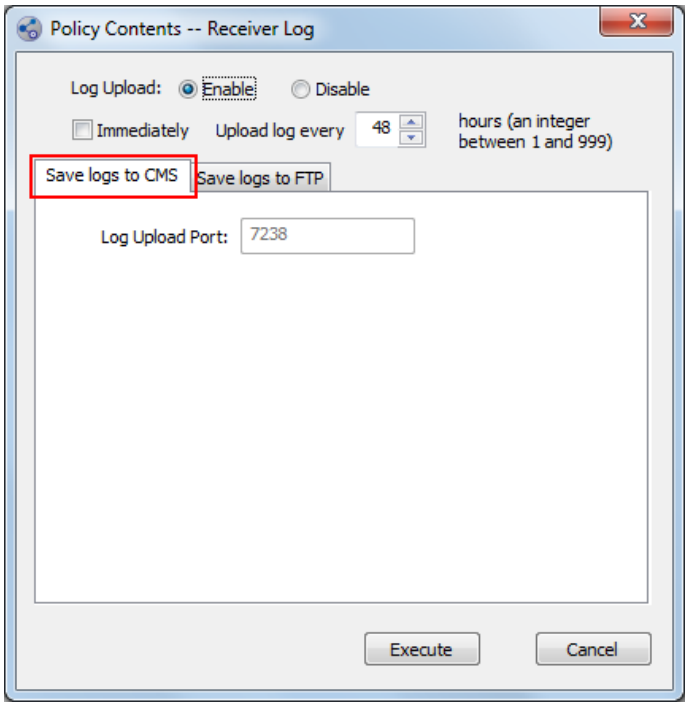

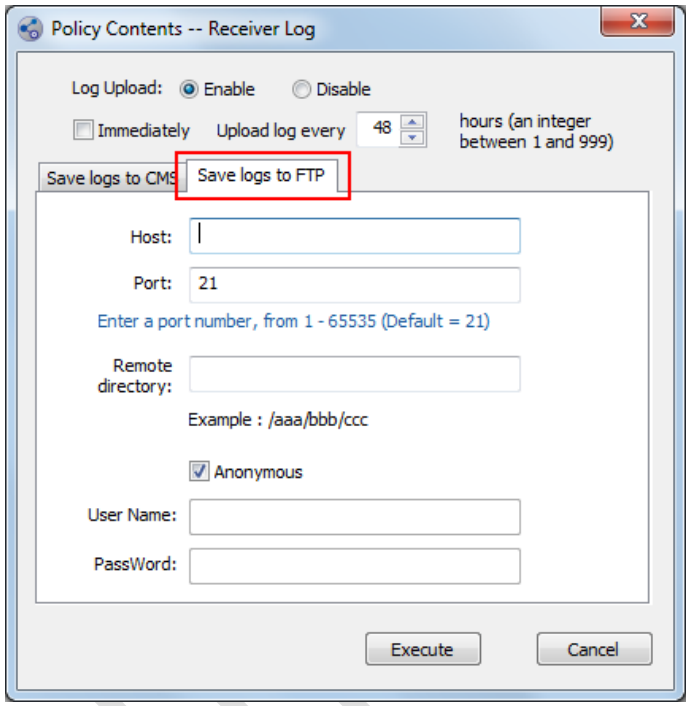

Save logs to CMS: Logs are saved directly to a folder on the CMS server.

Save logs to FTP: Logs are saved to a remote FTP server. Enter the appropriate values for the chosen FTP server.

- **Host**: IP address of the FTP server.
- **Port**: The port number for the FTP server.
- **Remote Directory**: The directory where to save the receiver logs. If the directory that does not exist, the FTP server will create this directory.
- **Anonymous**: Select to use anonymous access to the FTP server. Make sure the FTP server allows anonymous access.
- **User Name** and **Password**: Enter the account credentials to use for access to the FTP server, if user verification is required. You should obtain the username and password from your system administrator.

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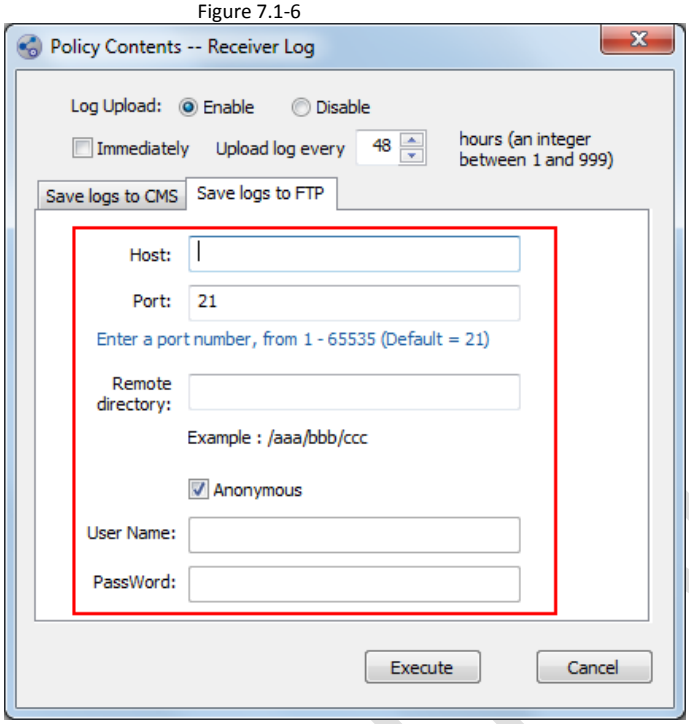
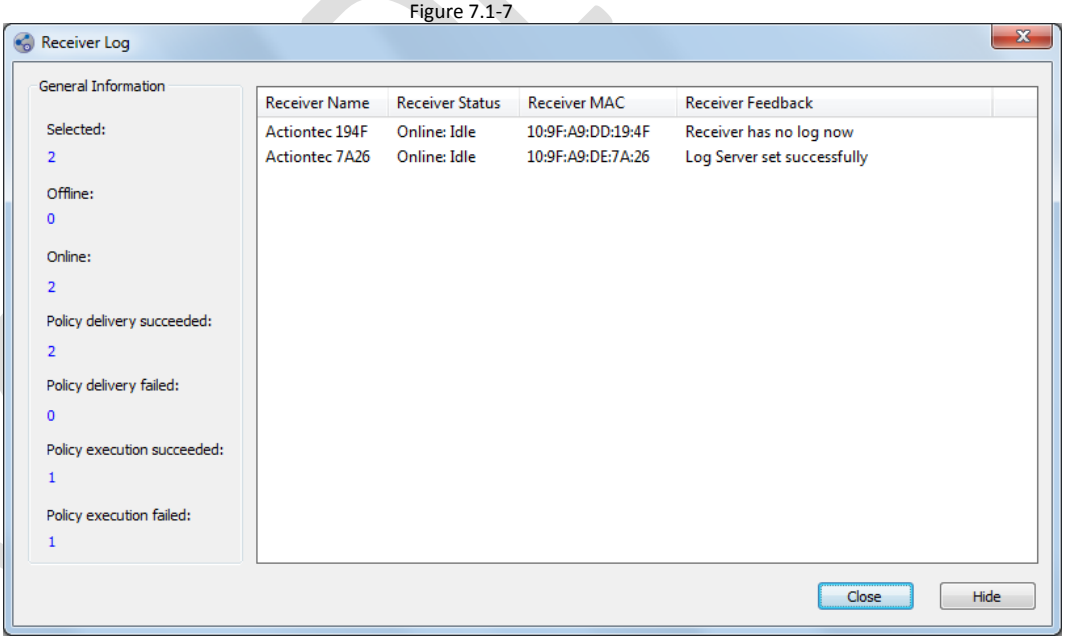
Figure 7.1-6



7. Click **Execute**, and the **Receiver Log** window appears, which shows log upload status for the selected receivers.

Figure 7.1-7



8. The receivers will upload their logs to the FTP server or CMS periodically in accordance with the defined interval.

Note: If no log is generated by a receiver during an interval, an empty file is uploaded to the FTP/CMS server.

Note: If a log is not uploaded successfully the receiver will send a warning message to the CMS server. This may occur, for instance, if the FTP server is down. These messages are displayed on the **Receiver Warning Message** box, which pops up immediately when such messages are received.

Note: If a log fails to upload successfully, the receiver will attempt to upload it again at the next interval. If the log upload fails again, the log will be discarded.

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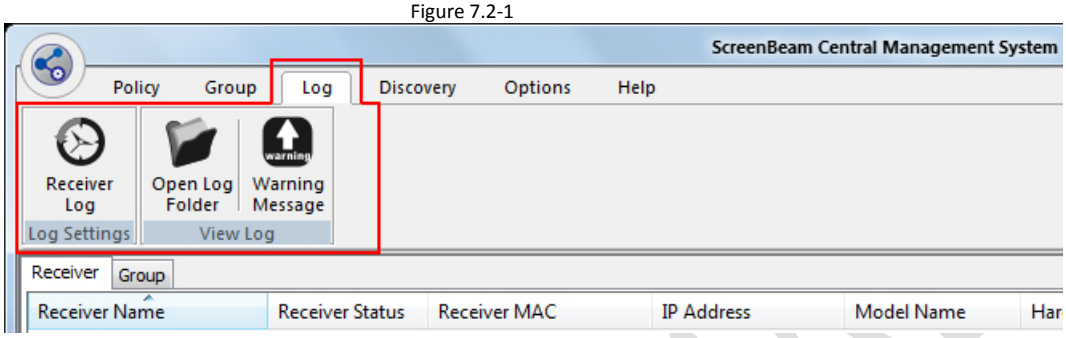
7.2 Viewing Receiver Logs

ScreenBeam CMS allows you to view the ScreenBeam Receiver logs directly from the CMS software, if the logs are saved locally to the CMS server.

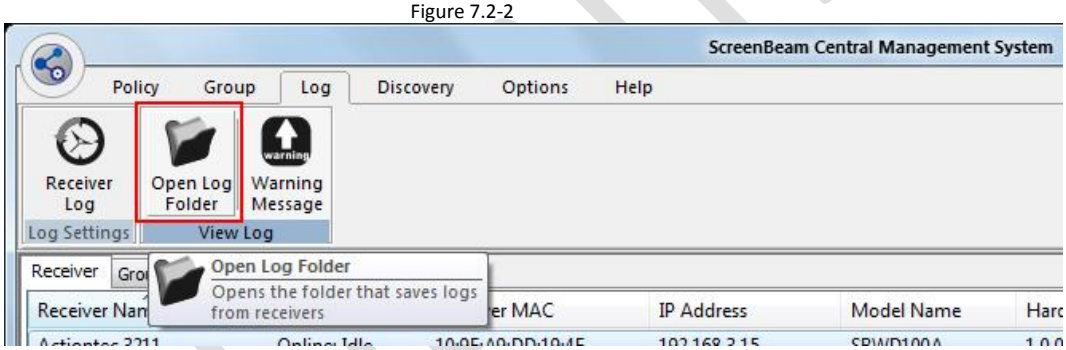
1. Launch the CMS software and go to the **Log** tab.

Figure 7.2-1



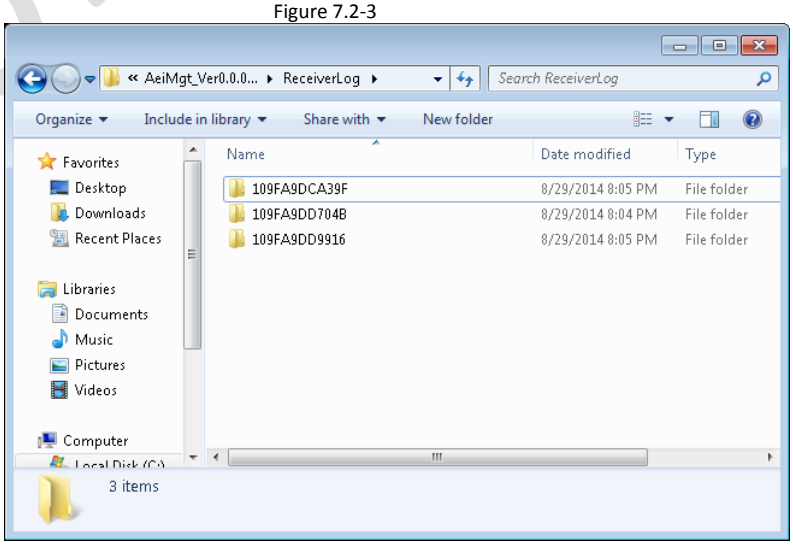
2. Select **Open Log Folder** from the Action Bar.

Figure 7.2-2



3. This will open the **ReceiverLog** folder.
4. A separate folder for each receiver is created. The folder name will be the MAC address of the ScreenBeam Receiver.

Figure 7.2-3



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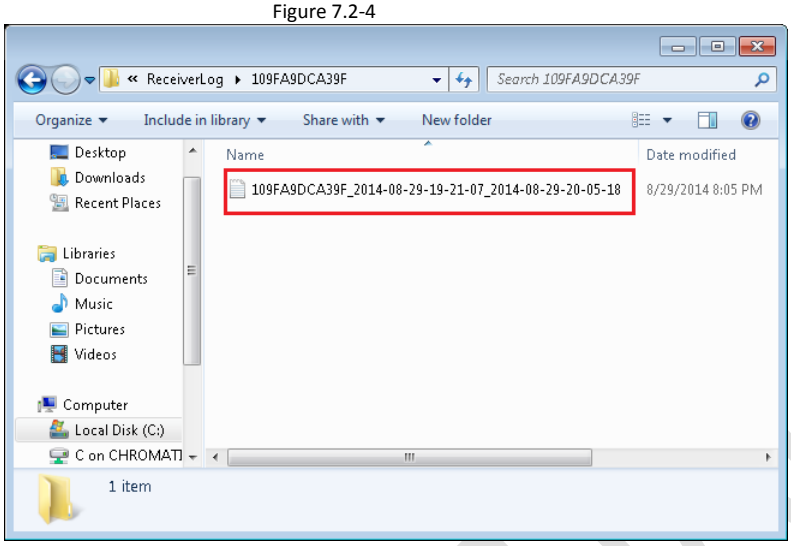
5. The log name is in the following format: **<Receiver's Mac Address>_<Logging Start Time>_<Logging End Time>**.

Figure 7.2-4



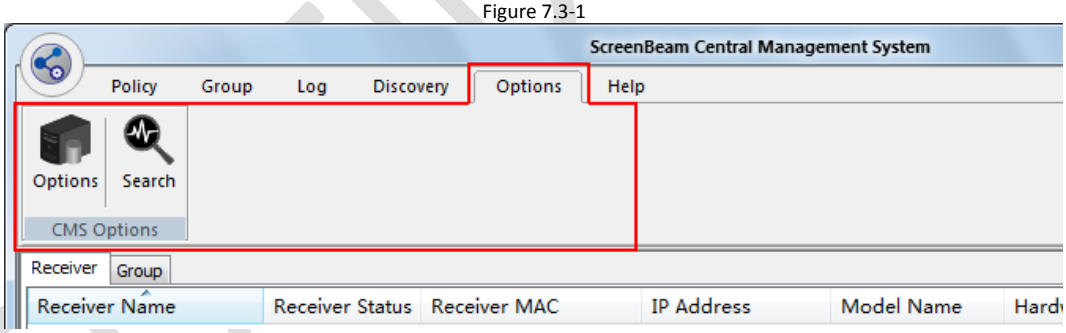
Note: Each log file contains only the events for a particular interval

7.3 Log Management

You can manage all your logs through the **Log Management** feature in the **Options** menu. For example, change the log saving folder, or view logs.

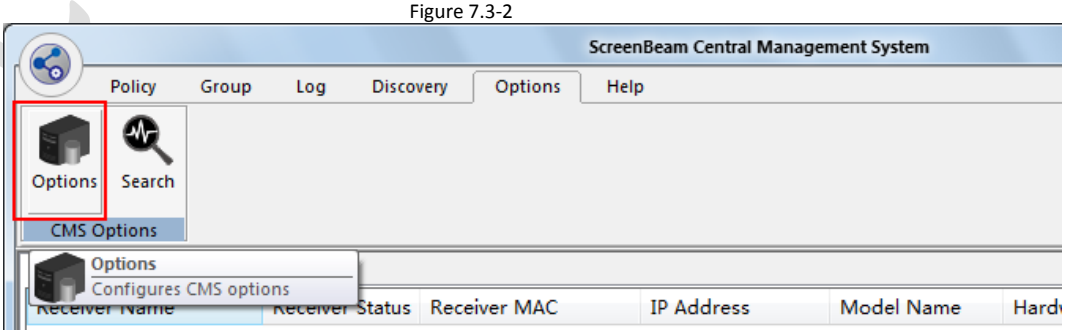
1. Launch the CMS software and go to the **Options** tab.

Figure 7.3-1



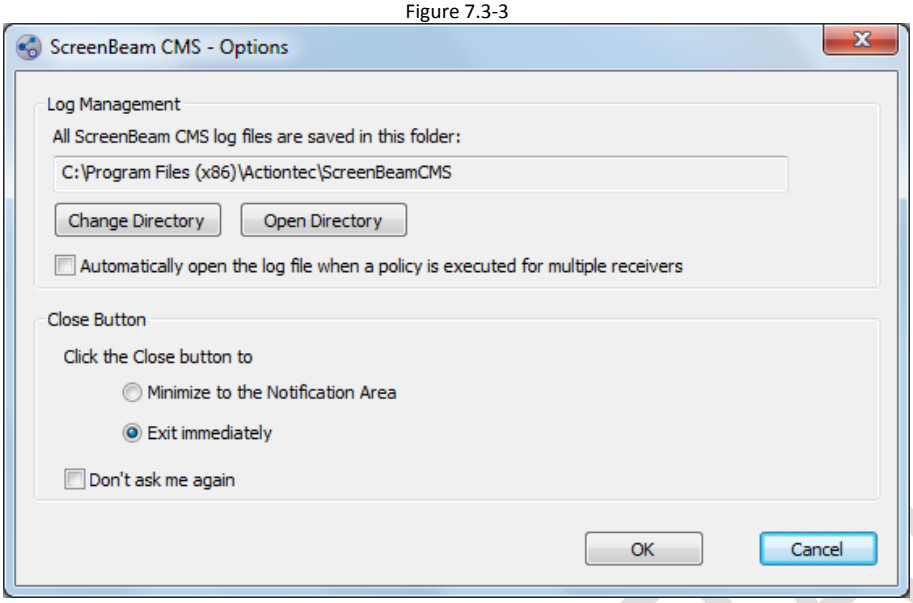
2. Select **Options** from the Action Bar.

Figure 7.3-2

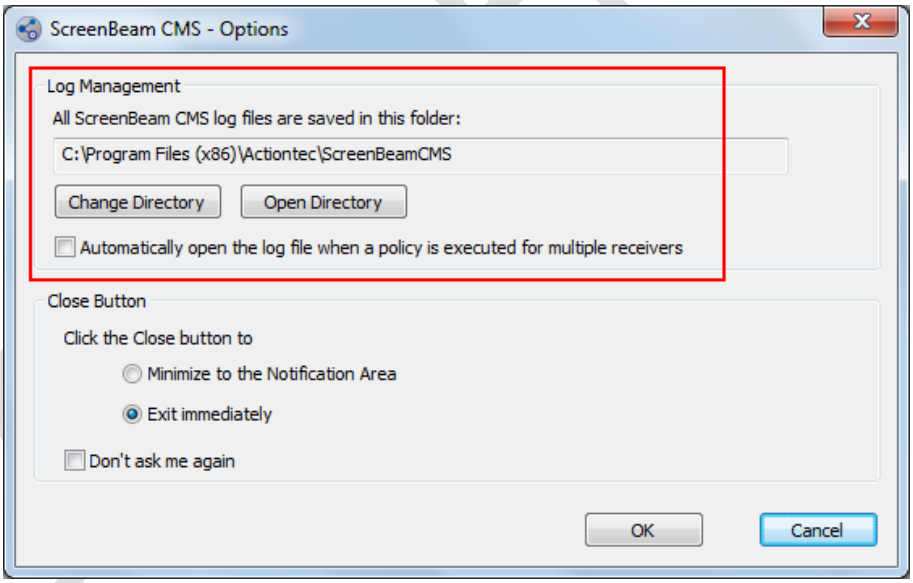


3. The **ScreenBeam CMS – Options** window appears.

Figure 7.3-3



4. Go to the **Log Management** section, and select a desired option.
   - **Change Directory**: Select a folder for saving logs.
   - **Open Directory**: Open the log saving folder, and check the logs.
   - **Automatically open the log file when …**: The CMS software will open the log when a policy is executed for multiple receivers, if this option is selected (checked).



5. Click **OK** to save your settings.

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Section 8

CMS Server Settings

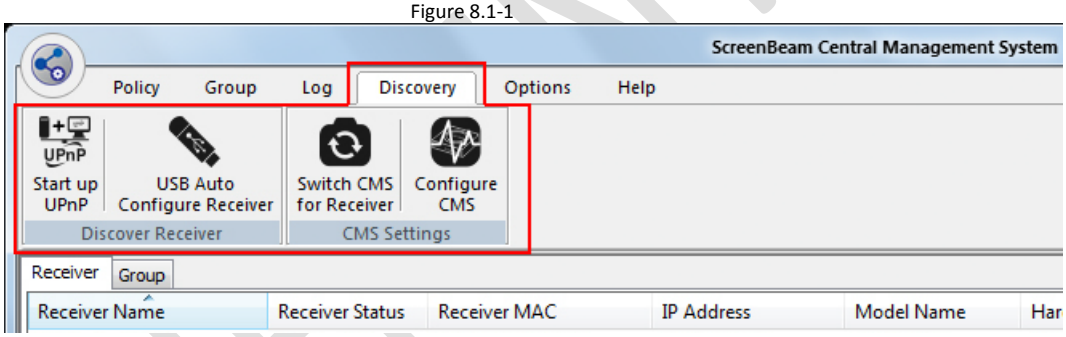
The following section will describe the features that will allow you to easily migrate your receivers to another CMS server should the occasion present itself. It will also guide you to modifying the CMS's ports if a change is necessary.

8.1 Switch Receiver to a different CMS Server

When you have deployed multiple ScreenBeam Central Management System servers in your network, you may need to reassign your receivers to these additional or replacement servers. ScreenBeam CMS provides a simple server switch function, which can help you switch receivers to another CMS easily and quickly. Follow the procedure below to assign one or more receivers to another server:

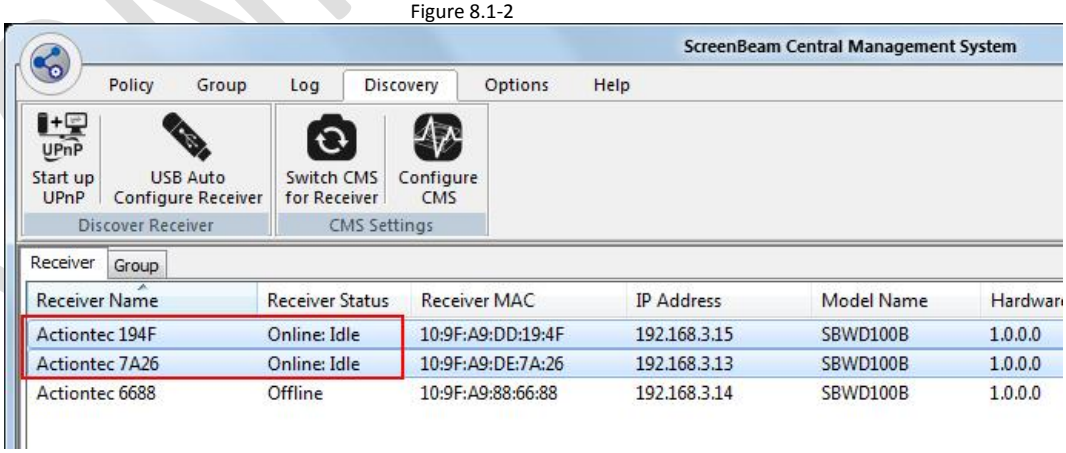
1. Launch the CMS software and go to the **Discovery** tab.

Figure 8.1-1



2. In the Receiver List, select one or more receivers that you want to assign to the new server.

Figure 8.1-2



Note: You can also select receivers by groups (by checking the groups' checkboxes).

3. Click the **Switch CMS for Receiver** button in the Action Bar.

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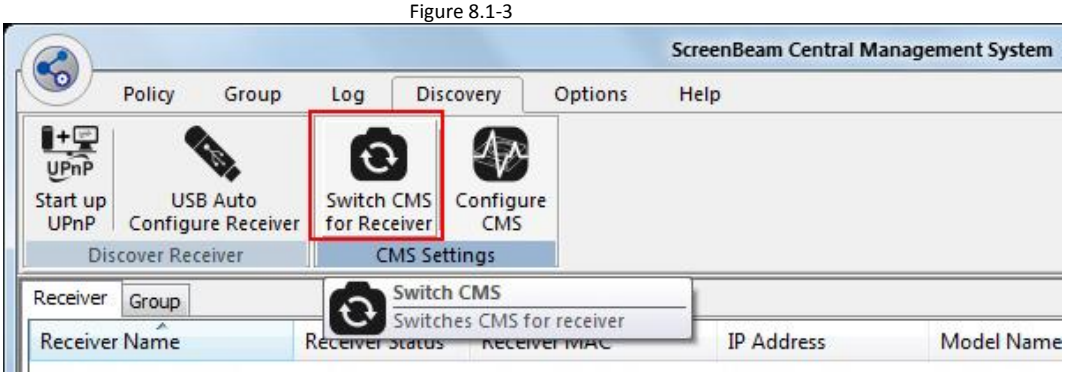
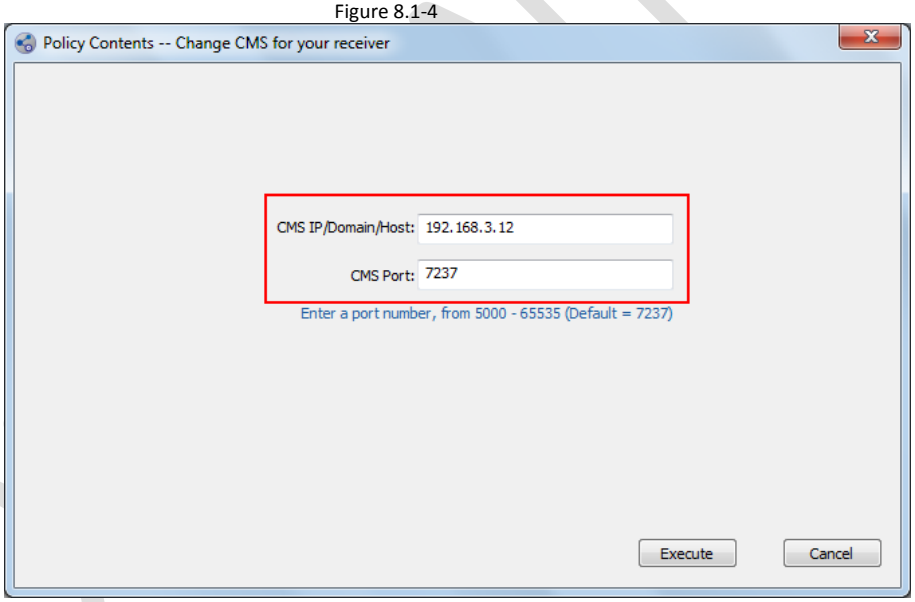
Figure 8.1-3



4. The **Policy Contents - Change CMS for your receiver** window appears. Properly configure and double-check these parameters.

   - **CMS IP/Domain/Host:** It is the IP address, FQDN/hostname/domain name/alias name of the new CMS server. Enter the IP address, or FQDN/hostname/domain name/alias name of the new CMS server (if you have properly configured the DNS server and the DHCP server).
   - **CMS Port:** Receivers communicate with the CMS through this port. Enter a new port number for communication with the CMS server.

Figure 8.1-4



WARNING! Verify your IP address (or FQDN/hostname/domain name/alias name) and port before clicking **Execute**. If a wrong IP address/ FQDN/hostname/domain name/alias name or port is entered, the ScreenBeam CMS will no longer be able to communicate with the receivers, and each receiver will need to be individually provisioned with a USB drive to the new CMS settings.

5. Click **Execute** to assign the servers to the new server.
6. The **Change CMS for your receiver** window appears, which shows CMS switching status for the selected receivers.

   - **Selected:** It displays the total number of selected receivers.
   - **Offline:** It displays the number of offline receivers that are selected.

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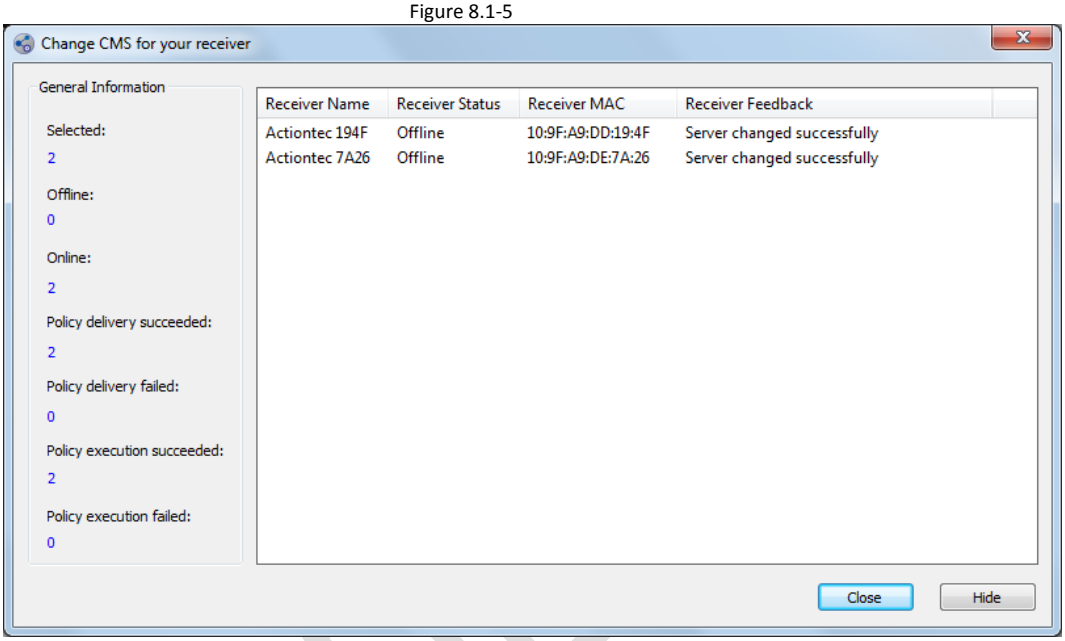
- **Online:** It displays the number of online receivers that are selected.
- **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
- **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
- **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
- **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

Figure 8.1-5



Note: The **Change CMS for your receiver** window will not appear if just one receiver is selected.

7. Click the **Close** button to close the window.

   Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

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8.2 Modify CMS Server Settings

ScreenBeam Central Management System allows you to change the current CMS's ports.

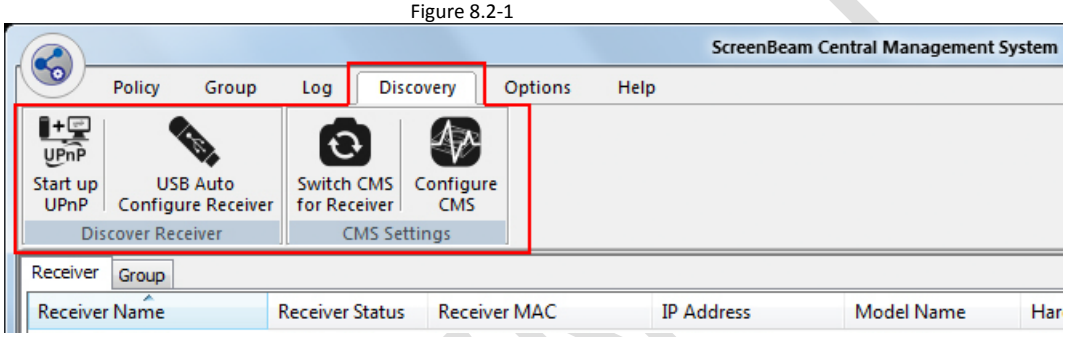
Warning! If the ScreenBeam receivers are not set to detect the CMS server using DNS, then you must switch all receivers to the new server before changing the CMS's port. Otherwise, receivers will not communicate with the new CMS, and you have to configure these receivers with a USB flash drive.

Note: Refer to Section 8.1 – Switch Receiver to a different CMS Server for details.

Note: Refer to Section 3.4 – Discover Receivers using a USB Drive for discovering receivers using a USB drive.

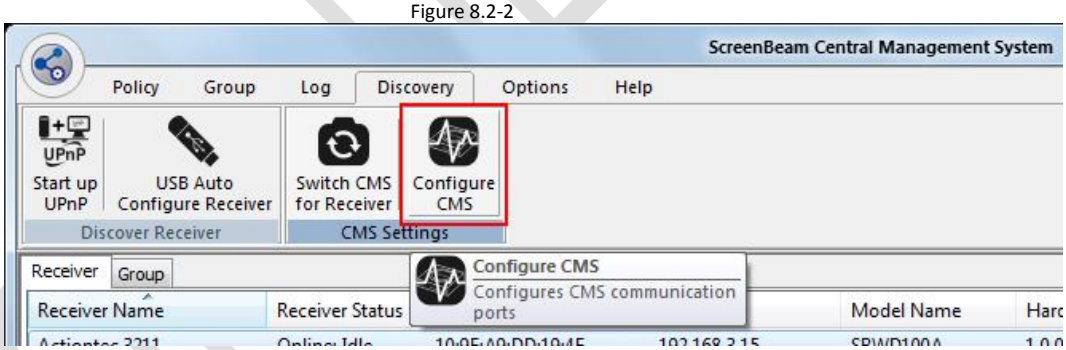
2. Launch the CMS software and go to the **Discovery** tab.

Figure 8.2-1



3. Click on **Configure Server** from the Action Bar.

Figure 8.2-2



4. The **ScreenBeam CMS – Communication Ports** window appears. Properly configure and double-check these parameters.

- **CMS Communication Port:** Receivers communicate with the CMS through this port. Enter a new port number for communication with the CMS server.
- **Log Upload Port:** Receivers upload logs to the CMS through this port. Enter a new port number to use for saving receiver logs to the CMS server.

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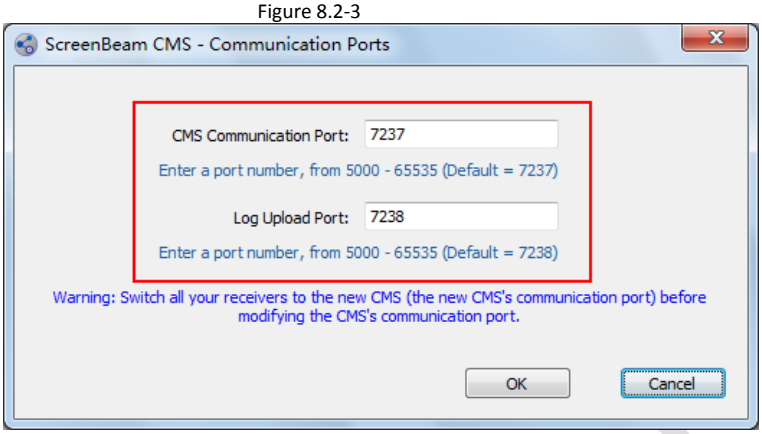
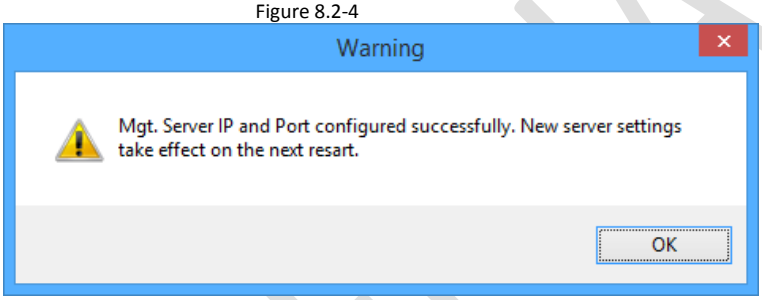
Figure 8.2-3



5. Click the **Save** button to save the new server settings. You must restart the CMS in order for the new setting to take effect.

Figure 8.2-4



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Section 9

Receiver Maintenance

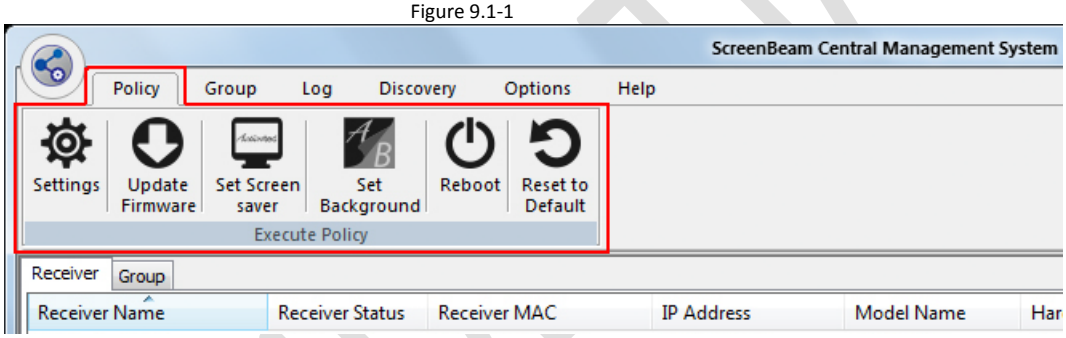
With the CMS server you can perform some remote management on the ScreenBeam receivers in your network. The CMS software will allow you to remotely reboot or reset to factory defaults one or more receivers.

9.1 Reboot Receivers

Follow the procedure below to remotely reboot the selected ScreenBeam receiver(s):

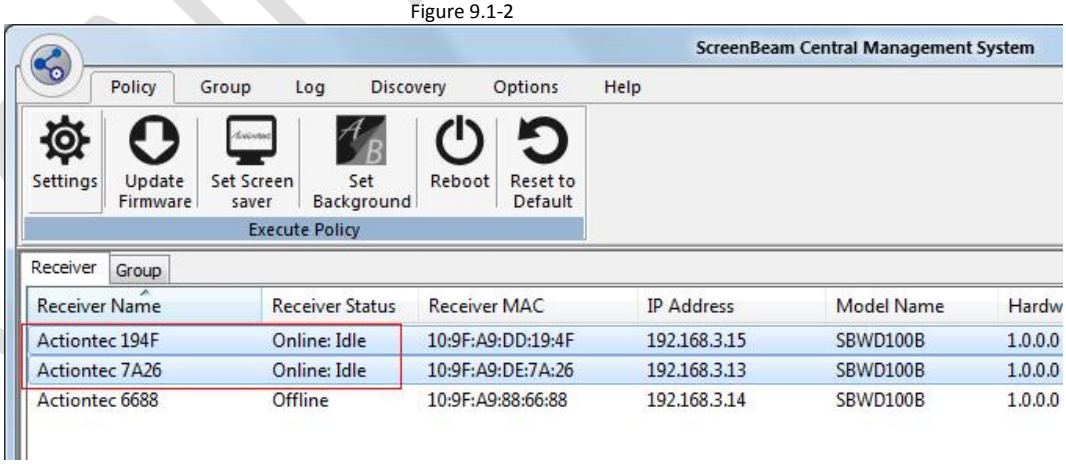
1. Launch the CMS software and go to the **Policy** tab.

Figure 9.1-1



2. In the Receiver List, select one or more receivers to reboot.

Figure 9.1-2



Note: You can also select receivers by groups in the Group Pane.

3. Click **Reboot** on the Action Bar.

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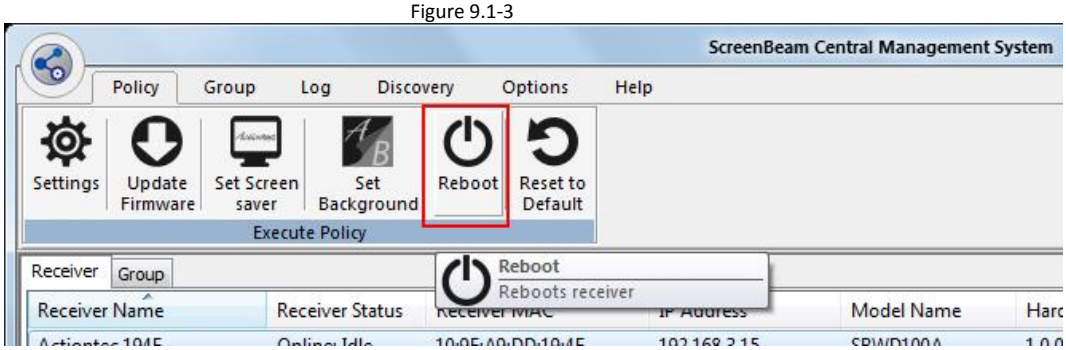
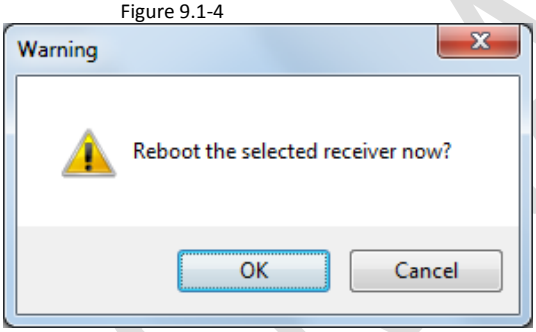
Figure 9.1-3



4. A message box appears. Click **OK** to continue.

Figure 9.1-4



5. The **Reboot for your receiver** window appears, which shows receiver reboot status for the selected receivers.
   - **Selected:** It displays the total number of selected receivers.
   - **Offline:** It displays the number of offline receivers that are selected.
   - **Online:** It displays the number of online receivers that are selected.
   - **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
   - **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
   - **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
   - **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

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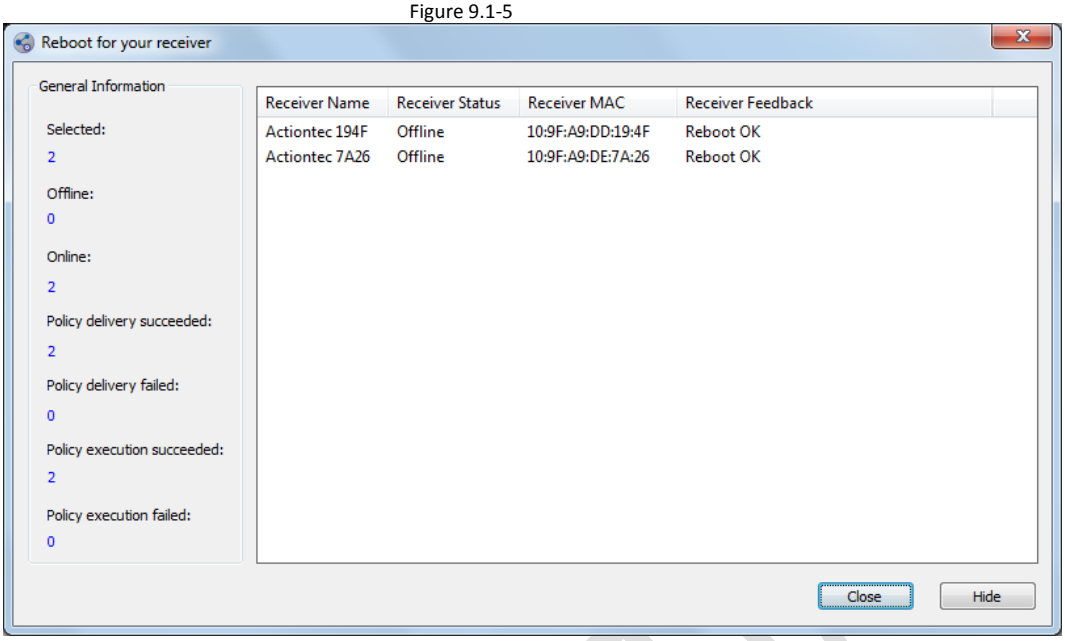
Figure 9.1-5



Note: The **Reboot for your receiver** window will not appear if just one receiver is selected.

6. The selected receivers will reboot immediately.
7. Click the **Close** button to close the window.

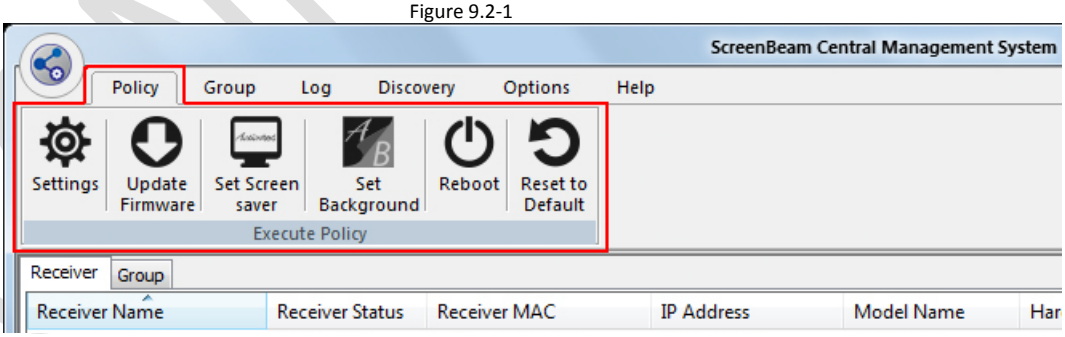
   Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

9.2 Restore Receiver Factory Defaults

Follow the procedure below to remotely reset the selected ScreenBeam receiver(s):

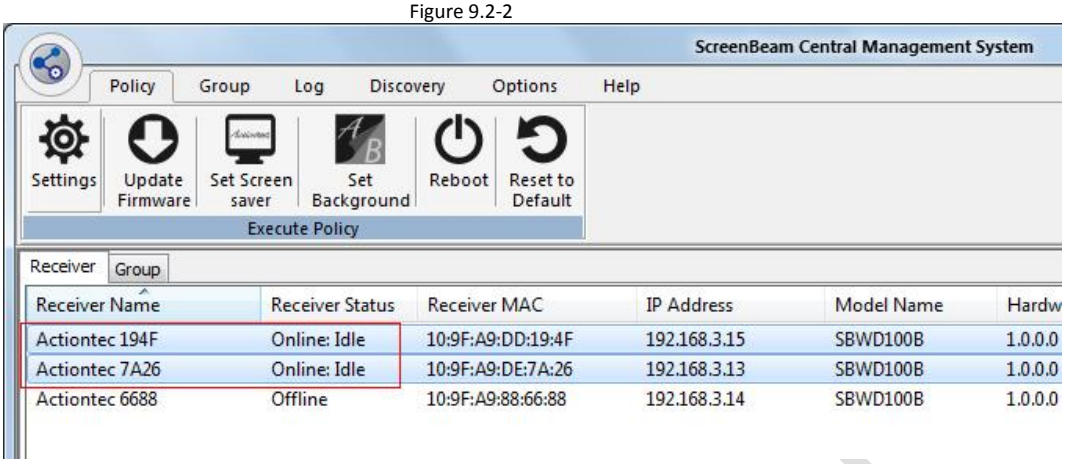
1. Launch the CMS software and go to the **Policy** tab.

Figure 9.2-1



2. In the Receiver List, select one or more receivers to reset.

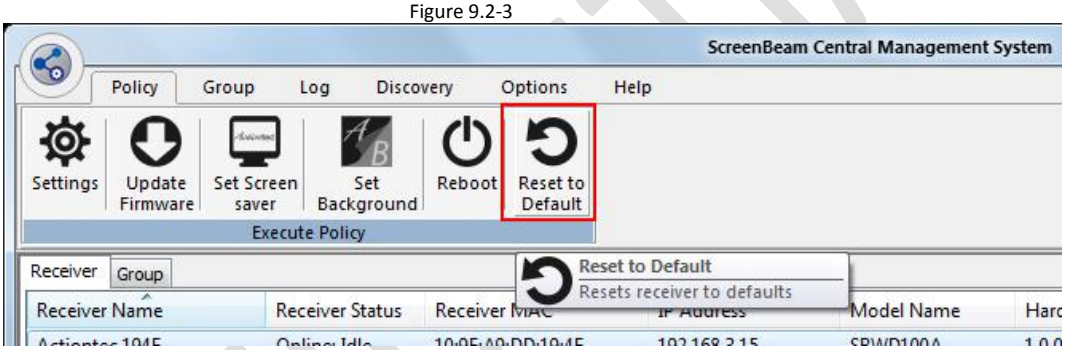
Figure 9.2-2



Note: You can also select receivers by groups in the Group Pane.

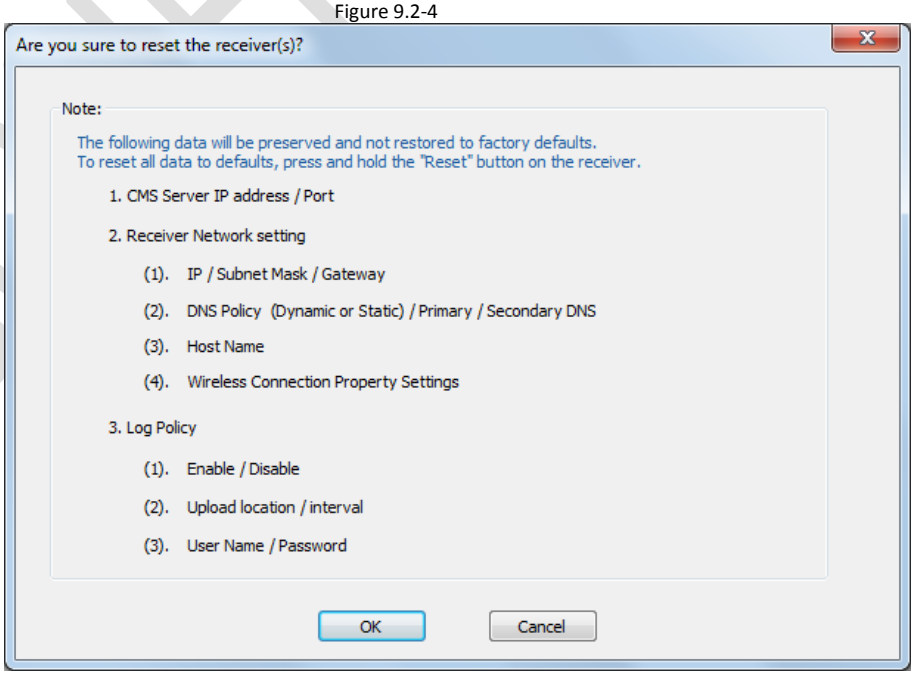
3. Click the **Reset to Default** button on the Action Bar.

Figure 9.2-3



4. A confirmation window will appear. Click **OK** to continue.

Figure 9.2-4



Note: The following data will be preserved and not restored to factory defaults:

- CMS Server IP address
- Upload LOG Control

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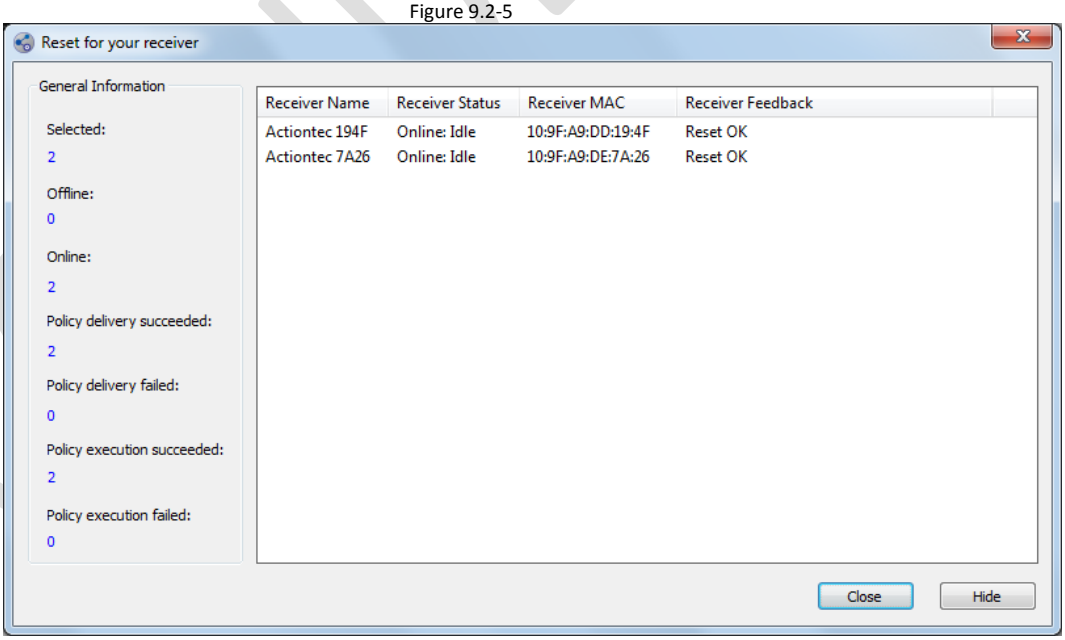
- CMS Server Port
- Receiver IP Policy (DHCP or Static IP)
- Receiver IP address
- Receiver Subnet Mask
- Receiver Gateway
- Receiver DNS Policy (Dynamic or Static)
- Primary DNS
- Secondary DNS
- Receiver Host Name
- (Enable or Disable)
- Log upload location
- Log upload interval
- FTP Login Control (Enable or Disable)
- FTP login user name
- FTP login password
- Wireless connection settings

5. The **Reset for your receiver** window appears, which shows receiver reset status for the selected receivers.
   - **Selected:** It displays the total number of selected receivers.
   - **Offline:** It displays the number of offline receivers that are selected.
   - **Online:** It displays the number of online receivers that are selected.
   - **Policy delivery succeeded:** It displays the number of receivers to which the policy is delivered.
   - **Policy delivery failed:** It displays the number of receivers to which the policy is not delivered.
   - **Policy execution succeeded:** It displays the number of receivers that have successfully executed the policy.
   - **Policy execution failed:** It displays the number of receivers that have failed to execute the policy.

Figure 9.2-5



Note: The **Reset for your receiver** window will not appear if just one receiver is selected.

6. The selected receivers will restore to defaults immediately and reboot.
7. Click the **Close** button to close the window.

   Note: You can click the **Hide** button to hide this window. In this case, a **Show** button is display in the top right corner of the receiver pane. Click this button to display the window again.

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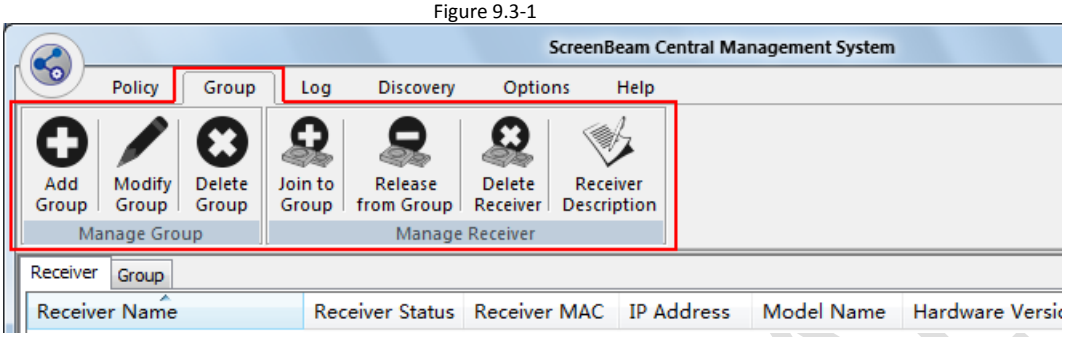
9.3 Receiver Description

This section will guide you in setting location information and additional information for receivers.

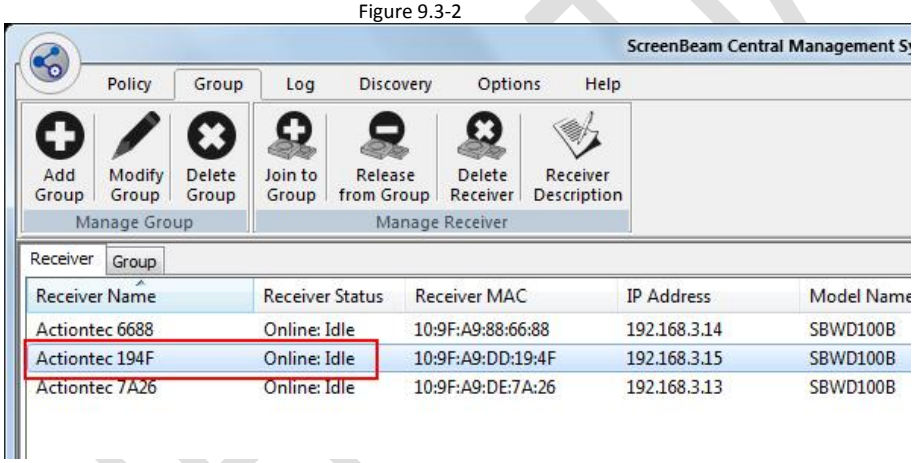
1. Launch the CMS software and go to the **Group** tab.

Figure 9.3-1



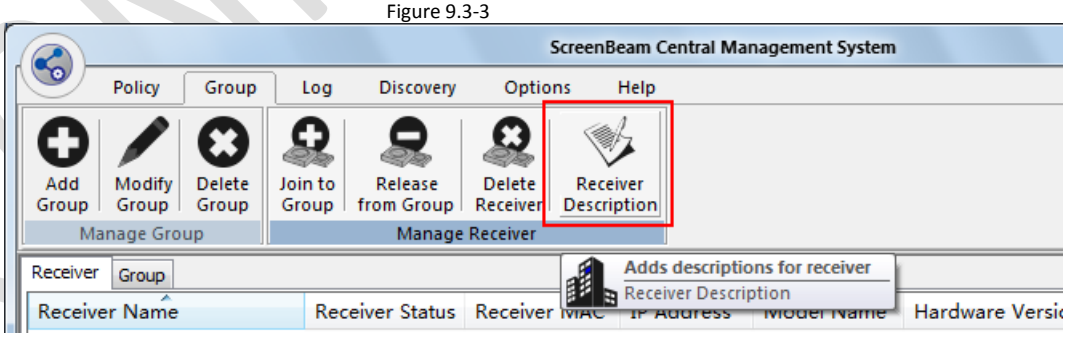
2. From the Receiver List, select one or more receivers that you would like to add descriptions. The selected receivers are highlighted.

Figure 9.3-2



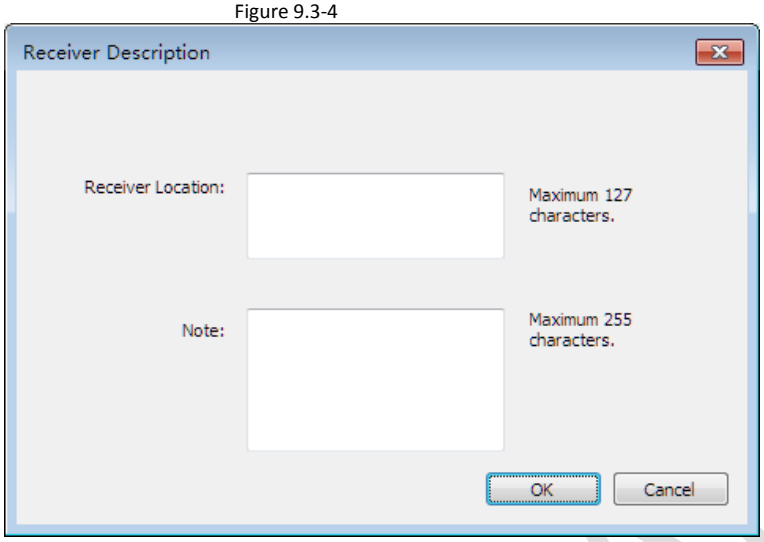
3. Click the **Receiver Description** button.

Figure 9.3-3



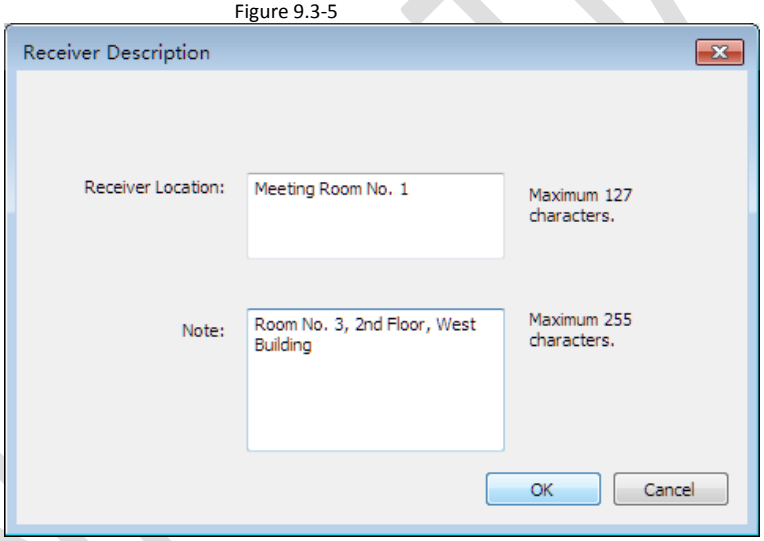
4. The **Receiver Description** window appears.

Figure 9.3-4



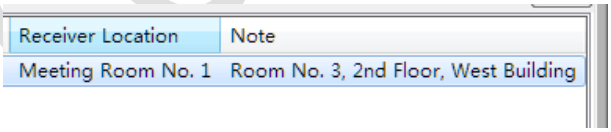
5. Type location information and additional information for the selected receivers in the **Receiver Location** box and the **Note** box respectively.

Figure 9.3-5



Note: When you select more than one receivers, you must note that new descriptions will overwrite the previous ones.

6. Click **OK** to save the descriptions. You can see your descriptions in the **Receiver Location** and **Note** columns.



Note: By default, the **Receiver Location** and **Note** columns are hidden. Refer to Section 1.6.2 **Hiding or Showing Columns** for details.

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Section 10

Troubleshooting

If your ScreenBeam Central Management System experiences problems, you may be able to resolve it with some help from the commonly encountered problems and their solutions as outlined in the table below.

Problem	Cause	Solution
My ScreenBeam Receiver is not connecting to the CMS server.	The receiver does not have an IP address	Check if the receiver is assigned with an IP address. You can check this in the lower right corner. If you see "Ethernet IP: xxx.xxx.xxx.xxx", your receiver is assigned an IP address. If no "Ethernet IP" is displayed, the receiver is not assigned an IP address. Then, you should check the router, cable connection, and/or USB-to-Ethernet adapter.
	The receiver has not been configured with the proper CMS parameters.	Check if the receiver is provisioned with the CMS server's IP address and port number. By default, the receiver is set to connect to the CMS through the domain name "server.aeisbcms.com". You can check this in the lower right corner. You should see "Connected to MGT: server.aeisbcms.com"/"Disconnected from MGT: server.aeisbcms.com". If you have set the receiver to connect to the CMS through the server's IP address, you should see "Connected to MGT: xxx.xxx.xxx.xxx"/"Disconnected from MGT: xxx.xxx.xxx.xxx". Then you should check if this IP address is the IP address of the CMS server. If not, you must correct it. If no “Disconnected” or “Connected” message is displayed, you should check the router, cable connection, and/or USB-to-Ethernet adapter.
	Corporate DNS server has not been configured.	Check if the domain name "server.aeisbcms.com" is added to the DNS server if you have deployed a DNS server. The domain name "server.aeisbcms.com" must pair with the IP address of the CMS server.
	Port forwarding not setup properly.	Check if you have properly configured port forwarding for the CMS server. Access the configuration page of the router that the CMS server connects to, and check the port forwarding page.
I have started the UPnP discovery in ScreenBeam CMS, but no receiver is discovered.	UPnP is not properly enabled or SSDP service is not started.	Check if UPnP is enabled in Windows. If not, enable UPnP in Windows. Refer to Section 3.3.1 for details.
		Check if the SSDP Discovery service is started. If not, start the SSDP Discovery service. Refer to Section 1.3 for detail.
		Check if UPnP is enabled on your router. If not, enable UPnP in

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Problem	Cause	Solution
		the router. Refer to Section 3.3.2 for details.
Some receivers can connect to the CMS server, but some cannot.	Port forwarding needs to be configured.	Probably, port forwarding is not correctly configured for the CMS. Check the port forwarding on the connected router. And configure it correctly.
My CMS does not respond or becomes slow to react when many receivers are being connected simultaneously.	CMS server system specs not powerful enough.	The CMS requires a lot of computer resources to process information of simultaneous connections to many receivers, which cause the CMS to react slowly. This is especially obvious for a computer with less powerful hardware configuration. You can upgrade your computer to improve this. For example, you may expand the capacity of RAM, and/or upgrade the CPU.
We don't have a DNS server. Can we use the CMS?	DNS Discovery is not mandatory. Use UPnP or USB Discovery methods.	You can provision receivers with the IP address and port number of the CMS through a USB flash drive, or use the UPnP function to discover receivers.
Why the receiver is still online after I have pulled the Ethernet cable out?	The SBCMS sends keep-alive packets to the receiver every 15 seconds. And the SBCMS determines that the receiver is offline when the receiver fails to respond for three times.	You can see the receiver offline about 50 seconds after you have pulled the Ethernet cable out.

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Section 11

Appendix

11.1 Configure Actiontec Receiver using a USB Flash Drive

Follow the procedure below to configure the receiver using a USB flash drive:

1. Prepare a USB flash drive, and create a file folder named "aei_config" in the root directory of the drive.

2. Create a file named "aei_config.conf" in the "aei_config" file folder.

3. Edit the "aei_config.conf" file. The format of the content is <VARIABLE>=<VALUE>. For example, aei_config_RandomNum=12345678. Separate two command lines with a newline character.

4. After the three steps above are completed, insert the USB flash drive to the receiver (the receiver is standby), and the receiver will configure itself automatically.

Note that you must change the value of "aei_config_RandomNum" each time you want to configure the same receiver.

FEATURE	VARIABLE	VALUE	NOTES
Random Number	aei_config_RandomNum	Random Number, 8 digits	Change to trigger USB config on the same RX
ETH IP Auto/Manual Policy	aei_config_ethIpPolicy	0 or 1	1.IP auto + DNS auto aei_config_ethIpPolicy=1 aei_config_ethDnsPolicy=1 2.IP auto + DNS manual aei_config_ethIpPolicy=1 aei_config_ethDnsPolicy=0 aei_config_ethDnsPrimary=ipAddr aei_config_ethDnsSecondary=ipAddr 3.IP manual + DNS manual aei_config_ethIpPolicy=0 aei_config_ethIpAddr=ipAddr aei_config_ethNetMask=ipAddr aei_config_ethGateWay=ipAddr aei_config_ethDnsPolicy=0 aei_config_ethDnsPrimary=ipAddr aei_config_ethDnsSecondary=ipAddr **Note:** 1. All other settings will be void. 2. If you want to leave settings for both
ETH IP Address	aei_config_ethIpAddr	IP Address	
ETH Subnet Mask	aei_config_ethNetMask	Subnet Mask	
ETH Gateway	aei_config_ethGateWay	Gateway	
ETH DNS Auto/Manual Policy	aei_config_ethDnsPolicy	0 or 1	
ETH Primary DNS	aei_config_ethDnsPrimary	Primary DNS	

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FEATURE	VARIABLE	VALUE	NOTES
ETH Secondary DNS	aei_config_ethDnsSecondary	Secondary DNS	the primary and secondary DNS servers empty, do NOT define values for "aei_config_ethDnsPrimary=ipAddr" and "aei_config_ethDnsSecondary=ipAddr". If you want to define just one DNS server, define the value for "aei_config_ethDnsPrimary=ipAddr" or "aei_config_ethDnsSecondary=ipAddr" only. Restrictions on IP and DNS comply with that on a PC.
CMS Server IP/Hostname/FQDN	aei_config_remoteMgtSvrIpAddr	IP Address/Hostname/FQDN	
CMS Server Port	aei_config_remoteMgtSvrPort	Port, such as 7237	
Screensaver On/Off	aei_config_ScrSaveEnable	0 or 1	1.Always on aei_config_ScrSaveEnable=0 2.Display Off aei_config_ScrSaveEnable=1 aei_config_HDMIOutEnable=0 aei_config_ScreenSaveSec=timeValue 3.Screensaver aei_config_ScrSaveEnable=1 aei_config_HDMIOutEnable=1 aei_config_ScreenSaveSec=timeValue **Note**: All other settings will be void.
HDMI Output On/Off	aei_config_HDMIOutEnable	0 or 1	
Screensaver/HDMI Output Timeout	aei_config_ScreenSaveSec	5 - 9999	
PIN Enforcement On/Off	aei_config_PINEnforceEnable	0 or 1	1.enforce PIN disable aei_config_PINEnforceEnable=0 2.enforce PIN enable(random pin) aei_config_PINEnforceEnable=1 aei_config_StaticPINEnable=0 3.enforce PIN enable(static pin) aei_config_PINEnforceEnable=1 aei_config_StaticPINEnable=1 aei_config_StaticPINCode=pinValue **Note**: 1. All other settings will be void. 2. PIN Code, 8 digits totally, the first 7 digits can be customized, and the last one is generated automatically.
PIN Static/Random Policy	aei_config_StaticPINEnable	0 or 1	
PIN Static Value	aei_config_StaticPINCode	7 digits	
Web Login Admin Username	aei_config_loginAdminUsername	Username	Minimum length is 1, maximum length is 16. Allows characters: A-Za-z0-9 @#$_-
Web Login Admin Password	aei_config_loginAdminPassword	Password	Minimum length is 1, maximum length is 16. Allows characters: A-Za-z0-9

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FEATURE	VARIABLE	VALUE	NOTES
			@#$_-
Broadcast Network Name on/off	aei_config_broadcastWirelessSsid	0 or 1	0: Off; 1: On
Show network information on splash screen	aei_config_showNetInfoOnTv	0 or 1	0: Off; 1: On
Device Name	aei_config_ReceiverName	Device name	Minimum length is 1, maximum length is 18. Allows characters: A-Za-z0-9 space ~!@#$%^&*()_+{}|:<>?=[];',./
Device Name Access	aei_config_ReceiverNameAccess	0 or 1	0: Enable; 1: Disable
Display Language	aei_config_Language	en, zhcs, zhct, ja, fr, ge, du, ko, sp	en: English; zhcs: Simplified Chinese; zhct: Traditional Chinese; ja: Japanese; fr: French; ge: Deutsch; du: Nederlands; ko: Korean; sp: Spanish;
Host Name	aei_config_hostName	Host name	Minimum length is 1, maximum length is 63. Only letters, numbers and the dash "-" are supported, and the first or the last character can not be a dash "-".
VGA Compatibility Mode	aei_config_vgaCompatibilityMode	0 - 2	0: Disable; 1: 1080; 2: 720
VGA Bypass Mode	aei_config_vgaBypassControl	0 or 1	0: Disable; 1: Enable
Video Max Resolution	aei_config_videoMaxResolution	0: Auto 1: 1080 2: 720 3: 480	The setting will restrict the configuration of VGA Compatibility Mode.
VGA Compatibility Mode	aei_config_vgaCompatibilityMode	0: Disable 1: 1080 2: 720 3: 480	The setting will be restricted by Video Max Resolution. The restrictions are described as follows: 1) If the Video Max Resolution is set to Auto, options available for VGA Compatibility Mode are Disable, 1080, 720, and 480. 2) If the Video Max Resolution is set to 1080, options available for VGA Compatibility Mode are Disable, 1080, 720, and 480. 3) If the Video Max Resolution is set to 720, options available for VGA Compatibility Mode are Disable, 720, and 480. 4) If the Video Max Resolution is set to 480, options available for VGA Compatibility Mode are Disable, and 480.

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FEATURE	VARIABLE	VALUE	NOTES
Audio Speaker Channels	aei_config_audioSpeakerChs	0: Auto 1: 2 Channels 2: 5.1 Channels	
TV Screen Size(Overscan)	aei_config_OverscanVal	0 – 25	
Runtime Overscan	aei_config_rtOverscanControl	0 or 1	0: Disable; 1: Enable
One Touch Play(HDMI-CEC)	aei_config_CECEnable	0 or 1	0: Disable; 1: Enable
HDCP Encryption	aei_config_hdcpEncryption	0 - 2	0: Enable; 1: Disable; 2: Demo Mode
Firmware Upgrade	aei_config_fwUpgradeAccess	0 or 1	0: Disable; 1: Enable
Network Name(SSID)	aei_config_wirelessNetworkName	SSID	Minimum length is 6, maximum length is 32. Allows characters: A-Za-z0-9 space ~!@#$%^&*()_+{}|:<>?-=[];,./
Network Password	aei_config_wirelessNetworkPwd	Password	Minimum length is 8, maximum length is 24. Allows characters: A-Za-z0-9 space ~!@#$%^&*()_+{}|:<>?-=[];,./
Managed Meetings	aei_config_managedMeetingsEnable	0 or 1	0: Disable; 1: Enable
Managed Meetings Port	aei_config_managedMeetingsPort	Port, such as 33033	1024-65535
Widi Lower Bandwidth	aei_config_widiLowerBandwidth	0 or 1	0: Disable; 1: Enable
USB Local Access	aei_config_usbLocalAccess	0 - 2	0: Disable; 1: Only fw update 2: enable
User Input Back Channel(UIBC)	aei_config_usbUibcEnable	0 or 1	0: Enable; 1: Disable
USB Over IP(UoIP)	aei_config_usbUoipEnable	0 - 2	0: Not done 1: Enable 2: Disable
Aspect Ratio	aei_config_aspectRatio	0 - 2	0: 4:3 1: 16:9 2: 16:10
Horizontal Offset	aei_config_horizontalOffset	-5000 to 5000	
Vertical Offset	aei_config_verticalOffset	-5000 to 5000	
Autonomous Group Owner(AGO)	aei_config_autonomousGoEnable	0 or 1	0: Disable; 1: Enable
P2P Wireless Network Name(SSID)	aei_config_p2pSsid	SSID	Minimum length is 9, maximum length is 32. And the prefix must be "DIRECT-xy". Allows characters: A-Za-z0-9 space ~!@#$%^&*()_+{}|:<>?-=[];,./
Group Owner Intent	aei_config_goIntentValue	0 – 15	
Channel Number	aei_config_autoGoChannel	Channel	Availability of channels depends on the country/region of sale.
P2P IP Address	aei_config_p2pIpAddr	IP Address	These four options must be configured in bundle. The P2P IP address must be
P2P Subnet Mask	aei_config_p2pIpSubnetMask	Subnet Mask	

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FEATURE	VARIABLE	VALUE	NOTES
P2P DHCP IP Start	aei_config_p2pIpDhcpStart	IP Dhcp Start	in the same network segment with the address in the DHCP address pool, and not included in this address pool.
P2P DHCP IP End	aei_config_p2pIpDhcpEnd	IP Dhcp End	
Wireless IP Address	aei_config_wlanIpAddr	IP Address	These four options must be configured in bundle. The IP address for the AP must be in the same network segment with the address in the DHCP address pool, and not included in this address pool.
Wireless Subnet Mask	aei_config_wlanIpSubnetMask	Subnet Mask	
Wireless DHCP IP Start	aei_config_wlanIpDhcpStart	IP Dhcp Start	
Wireless DHCP IP End	aei_config_wlanIpDhcpEnd	IP Dhcp End	
AP SSID connected by Receiver	aei_config_connectApName	SSID	1. WPA/WPA2-Enterprise Configuration aei_config_connectApName=<SSID> aei_config_connectApRadiusId=<Username> aei_config_connectApPasswd=<Password> aei_config_connectApSecType=5 2. Other Configuration aei_config_connectApName=<SSID> aei_config_connectApPasswd=<Password> aei_config_connectApSecType=<0 - 4> Note: The "aei_config_connectApRadiusId" item is required when the security type is set to "WPA/WPA2-Enterprise". The security types (aei_config_connectApSecType) are shown below: 0: Open 1: Shared 2: WPA-PSK[TKIP] 3: WPA2-PSK[AES] 4: WPA-PSK[TKIP] + WPA2-PSK[AES] 5: WPA/WPA2-Enterprise SSID: Minimum length is 1, maximum length is 64. Allows characters: A-Za-z0-9 space ~!@#$%^&*()_+{}|:<>?-=[];,./ Username: Minimum length is 1, maximum length is 128. Allows characters: A-Za-z0-9
AP Password connected by Receiver	aei_config_connectApPasswd	Password	
AP Security Type connected by Receiver	aei_config_connectApSecType	0 - 5	
AP Radius ID connected by Receiver	aei_config_connectApRadiusId	Username	

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FEATURE	VARIABLE	VALUE	NOTES
			.@ Password: Minimum length is 1, maximum length is 64. Allows characters: A-Za-z0-9 space ~!@#$%^&*()_+{}|:<>?-=[];,./

Note: The command lines marked in colors apply to different type of ScreenBeam receivers.

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